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浙江大学 上海高等研究院
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ZHEJIANG UNIVERSITY



IEEE International Congress on Intelligent and Service-Oriented Systems Engineering (CISOSE)

July 15-18, 2024

<https://iee-cisose-congress.org/>



2024 IEEE Future Technology Summit Smart Technology Intelligence for Sustainability

July 18, 2024, Shanghai, China

<https://ieeefuturetechnology.com/>

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ABOUT IEEE CISOSE 2024



Technology has the power to do many things, and changing the world is one of them. Innovations and new technologies are changing the daily lives of each and every one of us. Many things that were mere visions of the future yesterday are now a reality. Meanwhile, we are surrounded by technology at every moment of our lives.

After a long journey that began in 2005 with the IEEE International Workshop on Service-Oriented System Engineering (SOSE'05), in 2015 CISOSE has become an IEEE International Congress on Intelligent and Service-Oriented Systems Engineering (CISOSE).

Since then, CISOSE groups six conferences that cover the whole range of Service-Oriented System Engineering and its Applications, from Artificial Intelligence and Big Data to Distributed, Cloud and Mobile systems. It also organizes the IEEE Future Technology Summit, which focuses on the challenges and issues of building sustainable smart cities and living environments using smart IOT technologies, big data, and machine learning solutions.

The IEEE International Congress on Intelligent and Service-Oriented Systems Engineering is successfully organized on an annual basis either in the Americas, in Europe, or in Asia and constitutes a platform and venue for the wider community of Service-Oriented Systems Engineering and Distributed and Mobile Systems enthusiasts.

To address the current breakthrough of AI and Smart Machines and the future technology needs for flexible, scalable, and efficient infrastructures, the CISOSE 2024 will be held in Shanghai, China in order to allow academic researchers, industry leaders, major technology providers, and solution players from around the world to gather and exchange ideas, problems and solutions.

IEEE International Congress On Intelligent And Service-Oriented Systems Engineering will feature excellent keynote speakers and panelists in several parallel program tracks. Smart Cities and Big Data, as well as a showcase of real-world solutions in academia and industry. Chain technologies of the future. The future of AI and machine learning. In addition, there will be an exhibition of solutions for solution providers and university researchers.

CISOSE 2024 IS REPRESENTED BY SIX CO-LOCATED CONFERENCES AND TWO WORKSHOPS, INCLUDING:



IEEE JCC 2024

The 15th IEEE International Conference on Jointcloud Computing.



IEEE SOSE 2024

The 18th IEEE International Conference On Service-Oriented System Engineering.



IEEE BigDataService 2024

The 10th IEEE International Conference on Big Data Computing Service and Machine Learning Applications.



Mobile
Cloud

IEEE IMC 2024

The 12th IEEE International Conference on Intelligent Mobile Computing.

IEEE DAPPS 2024

The 6th IEEE International Conference on Decentralized Applications and Infrastructures.



IEEE AI TEST 2024

The 6th IEEE International Conference On Artificial Intelligence Testing.



IEEE FTS 2024

2024 Future Technology Summit.



IEEE FITYR 2024

The 1st IEEE International Workshop on Future Intelligent Technologies for Young Researchers.



SPECIAL ISSUES

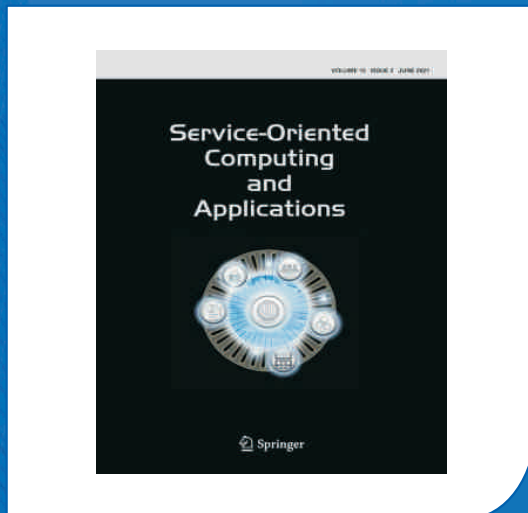
SELECTED PAPERS WILL BE CONSIDERED FOR

Selected papers from the CISOSE conferences will be considered for publication in the following journals:



**Future Generation of Computer Systems
(Elsevier)**

Special Issue on Big Data Computing Service and
Machine Learning Applications



**Journal of Service Oriented Computing
and Applications**

Special Issue on Testing and Automation
Services for Intelligent Systems



Journal of Big Data (Springer)

Selected papers from IEEE CISOSE will be recommended to this journal



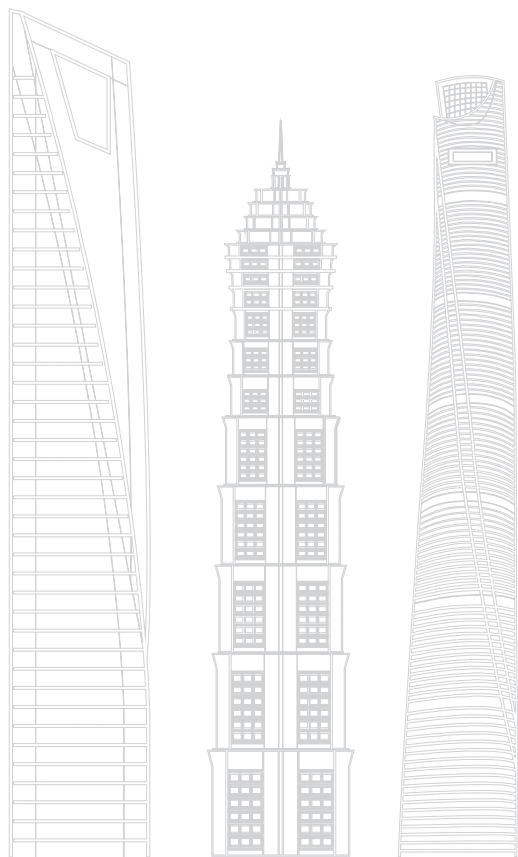
Blockchain: Research and Applications (Elsevier)

Special Issue on Decentralized Applications and Infrastructures



Smart Cities (MDPI)

Big Data and AI Services for Sustainable Smart Cities



ABOUT 2024 IEEE FTS



Since 2016, IEEE Future Technology Summit has been successfully organized and delivered as a great annual platform and venue to support the future technology discussion and exchanges on smart technologies, big data and artificial intelligence on building future smart cities. The subjects have been focused on smart technology advances and intelligence science and systems in building smart cities. IEEE Future Technology Summit has been set-up as a global exchange platform for industry leaders, researchers, and technology providers to discuss emergent challenges and solutions in smart city topics, including transportation, green building and clean energy, and healthcare services, future networking.

From 2020 to 2023, IEEE International Congress on Intelligent and Service-Oriented Systems Engineering (CISOSE) has organized and delivered IEEE Future Technology Summit to focus on challenges and issues in building sustainable smart cities and living environment using smart IOT technologies, big data, and machine learning solutions.

Today, the strong demands and fast advances on smart machines (Robotics, Autonomous Vehicles, and UAVs), edge cloud computing, and AI cloud services bring new business opportunities and research topics. To address the future technology needs, IEEE Future Technology Summit 2024 will be held in Greece to provide a global future technology exchange platform to support global networks and exchanges among academic researchers, industry leaders, major technology providers and solution players.

The major theme of this summit is smart machines and AI clouds for sustainable smart cities and clean environments. The major subjects and discussion topics will be focus on the followings:

- Track #1 – Future AI Technology and Intelligence – Prediction and Trends
- Track #2 – Tomorrow Smart City Big Data and Intelligence
- Track #3 – Intelligent System Test Automation and Quality Assurance
- Track #4 – Smart Agriculture Big Data and Intelligence
- Track #5 – Smart Machines, Cloud, and Intelligence
- Track #6 – Biocomputing, Medical Intelligence and Smart Medicines
- Track #7 – Digital Economy – Today and Tomorrow
- Track #8 – Climate change, Green Technology and Sustainability
- Track #9 – ESG and Sustainability
- Track #10 – Next Generation Connectivity and Intelligence



IEEE Future Technology Summit 2024 will be organized and sponsored by IEEE CISOSE2024 and co-located with six IEEE conferences, including IEEE JCC 2024, IEEE SOSE 2024, IEEE BigDataService 2024, IEEE MobileCloud 2024, IEEE DAPPS 2024, IEEE AI TEST 2024, IEEE FITYR 2024 and AI Standards Workshop 2024

IEEE FITYR 2024 The FITYR 2024 workshop endeavors to establish an international platform for communication and advancement, specifically designed for young researchers and practitioners. This platform aims to facilitate the exchange of innovative technologies, solutions, and services, as well as the sharing of the latest research findings, practical experiences, and lessons learned in the realm of Future Intelligent Technologies. Notably, this workshop will be held concurrently with IEEE FTS 2024 and IEEE CISOSE 2024.

AI Standards Workshop 2024 To address urgent needs for AI standard and intelligent system quality assurance, IEEE CISOSE congress, as an active research community in intelligence and service-oriented system engineering, recognizes both necessities and importance of establishing AI standards and quality assurance. This working workshop is setup to address this urgent and critical demand, and provides the first platform to support academic researchers, industry quality assurance groups, and practitioners to propose, discuss, and exchange AI intelligence and application system quality assurance issues, ideas, metrics, standards, and control systems.

The 2024 IEEE FTS will hold a two-day summit forum in Taoyuan, Taiwan, from July 20 to 21, 2024, with the theme centered on aerospace technology, artificial intelligence and drones.

UASACT 2024 Taiwan

UASACT 2024 International Drone and Artificial Intelligence Carnival. The competition is divided into three major areas: UAV flight competition, AI robot competition, and unmanned vehicle AI innovation application competition.

The Taiwan competition will be held at the Taoyuan Arena on July 6-7, 2024.

UASACT 2024 Malaysia

The UASACT 2024 International Finals will be held in MITEC Malaysia on November 22-24, 2024, hosted by the Malaysian Autonomous Intelligence & Robotics Association (MyAIRA).

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Pan Yunhe

Academician, expert in artificial intelligence and computer graphics in China, a tenured professor at the School of Computer Science of Zhejiang University, and a doctoral supervisor of computer science and technology.



Vincenzo Piuri

Artificial Intelligence in Cloud/Fog/Edge Computing and Internet-Of-Things Professor, IEEE Fellow
Università degli Studi di Milano, Italy



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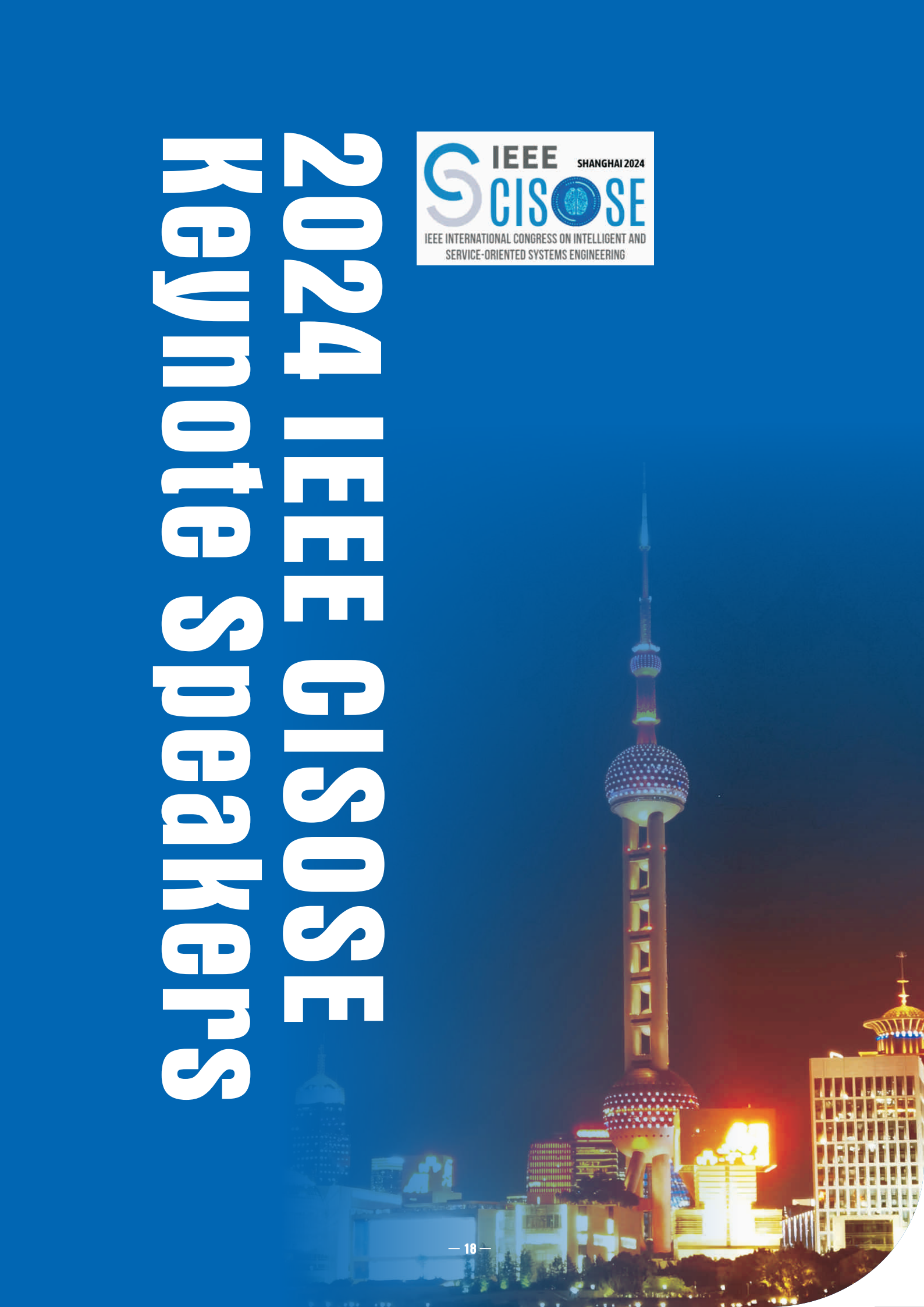


Jiamei Li

Forbes Global Alliance International
Young Leaders
Co-founder of East & Tea.



2024 IEEE CISOSE Keynote Speakers



IEEE CISOSE 2024

Opening Speaker



Xinping Guan, Professor, IEEE Fellow

Chair Professor of Shanghai Jiao Tong University, Shanghai, China

Xinping Guan (Fellow, IEEE) received the B.Sc. degree in mathematics from Harbin Normal University, Harbin, China, in 1986, and the Ph.D. degree in control science and engineering from the Harbin Institute of Technology, Harbin, China, in 1999. He is currently the Chair Professor of Shanghai Jiao Tong University, Shanghai, China, where he is also the Dean of School of Electronic, Information and Electrical Engineering, and the Director of the Key Laboratory of Systems Control and Information Processing, Ministry of Education of China. Before that, he was the Executive Director of Office of Research Management, Shanghai Jiao Tong University, a Full Professor, and the Dean of Electrical Engineering, Yanshan University, Qinhuangdao, China. He has authored or coauthored five research monographs, more than 200 papers in IEEE transactions and other peer-reviewed journals, and numerous conference papers. His research interests include industrial network systems, smart manufacturing, and underwater networks. As a Principal Investigator, he has finished/been working on more than 20 national key projects. He is the Leader of the prestigious Innovative Research Team of the National Natural Science Foundation of China. He is an Executive Committee Member of Chinese Automation Association Council and the Chinese Artificial Intelligence Association Council. Dr. Guan was the recipient of the Second Prize of the National Natural Science Award of China in both 2008 and 2018, First Prize of Natural Science Award from the Ministry of Education of China in both 2006 and 2016, and IEEE Transactions on Fuzzy Systems Outstanding Paper Award in 2008. He is a National Outstanding Youth honored by NSF of China, and Changjiang Scholar's by the Ministry of Education of China and State-Level Scholar of New Century Bai Qianwan Talent Program of China.

Artificial Intelligence for Biometric Technologies and Systems



Vincenzo Piuri, Professor, IEEE Fellow
Università degli Studi di Milano, Italy

Biometrics concerns the study of automated methods for identifying an individual by measuring one or more physical or behavioral features of him. Certain physical human features or behaviors are characteristics that are specific and can be uniquely associated to one person. Retinas, iris, DNA, fingerprint, palm print, or pattern of finger lengths are typical physical features that are specific to individuals. Also the voice print, gait, or handwriting can be used to this purpose. Nowadays biometrics is rapidly evolving. This science is getting more and more accurate in identifying persons and behaviors. Consequently, these technologies become more and more attractive and effective in critical applications, such as to create safe personal IDs, to control the access to personal information or physical areas, to recognize terrorists or criminals, to study the movements of people, and to monitor the human behavior. The use of biometrics in the real life often requires very complex signal and image processing and scene analysis, for example encompassing biometric feature extraction and identification, individual tracking, face tracking, eye tracking, liveness/anti-spoofing tests, and facial expression recognition.

Artificial intelligence techniques (including neural networks, fuzzy logic, evolutionary computing, and multi-agent systems) have been proved to be useful and effective in addressing this kind of data processing, especially when it is difficult to identify an algorithm while sufficiently descriptive examples are available, or when fuzzy descriptions are more natural to capture the essence of the problem, or when complex non-linear optimization is needed, or when multiple agents cooperate in solving the application problem. This talk will review the domain of biometrics, its applications in various domains and the relevance of artificial intelligence, in particular neural networks and deep learning) to effectively solve various problems in these applications.

Bio

Vincenzo Piuri has received his Ph.D. in computer engineering at Polytechnic of Milan, Italy (1989). He is Full Professor in computer engineering at the University of Milan, Italy (since 2000). He has been Associate Professor at Polytechnic of Milan, Italy and Visiting Professor at the University of Texas at Austin, USA, and visiting researcher at George Mason University, USA. His main research interests are: artificial intelligence, computational intelligence, machine learning, pattern analysis and recognition, intelligent systems, signal and image processing, biometrics, intelligent measurement systems, industrial applications, digital processing architectures, fault tolerance, cloud computing infrastructures, and internet-of-things. Original results have been published in 400+ papers in international journals, proceedings of international conferences, books, and book chapters.

He is Fellow of the IEEE, Distinguished Scientist of ACM, and Senior Member of INNS. He is IEEE Region 8 Director (2023-24), and has been IEEE Vice President for Technical Activities (2015), IEEE Director, President of the IEEE Systems Council, President of the IEEE Computational Intelligence Society, Vice President for Education of the IEEE Biometrics Council, Vice President for Publications of the IEEE Instrumentation and Measurement Society and the IEEE Systems Council, and Vice President for Membership of the IEEE Computational Intelligence Society.

He has been Editor-in-Chief of the IEEE Systems Journal (2013-19). He is Associate Editor of IEEE Open Journal on Systems Engineering and has been Associate Editor of the IEEE Transactions on Computers, the IEEE Transactions on Cloud Computing, the IEEE Transactions on Neural Networks, the IEEE Transactions on Instrumentation and Measurement, and IEEE Access. He received the IEEE Instrumentation and Measurement Society Technical Award (2002), the IEEE TAB Hall of Honor (2019), and the Rudolf Kalman Professor Title of the Obuda University, Hungary. He is Honorary Professor at: Obuda University, Hungary; Guangdong University of Petrochemical Technology, China; Northeastern University, China; Muroran Institute of Technology, Japan; Amity University, India; Galgotias University, India; Chandigarh University, India; and BIHER, India.



Powering Real-World Transformation with Big Data and Machine Learning



Xiaoli Li, Professor, IEEE Fellow
Institute for Infocomm Research, Singapore

This presentation introduces some impact of big data and machine learning across crucial industries such as manufacturing, semiconductor, transportation, finance, and aerospace.

Beginning with manufacturing and aerospace, experience firsthand how AI-driven time series analytics emerge as transformative tools, enabling predictive maintenance and condition monitoring. Discover how these advancements optimize operations, minimize downtime, and elevate productivity to unprecedented levels. Moving on to semiconductor applications, witness how AI becomes indispensable in optimizing Design of Experiments (DOE) and detecting defects in 3D structures. Uncover how these applications uphold the high standards of product quality and reliability, driving innovation and competitiveness to new heights. In transportation, a new era unfolds with AI's intervention, where predictive modeling and real-time analytics revolutionize safety and efficiency. Explore the interesting mechanisms behind smart traffic light management systems ensuring seamless traffic flow and alleviating congestion. In finance, witness a paradigm shift as AI-driven HR analytics redefine talent management, empowering proactive strategies to retain top talent. Explore predictive models that forecast employee attrition, enabling organizations to cultivate a stable and motivated workforce.

Embark on a journey to uncover how AI and data science are reshaping industries, igniting innovation, and paving the way for real-world transformation.

Bio

Xiaoli currently leads the Machine Intelligence department, comprising over 100 AI and data scientists, making it the largest AI and data science group in Singapore, alongside serving as a senior principal scientist at the Institute for Infocomm Research, A*STAR. Additionally, he holds a professor position at Nanyang Technological University. Xiaoli's extensive leadership extends to joint lab director roles for major companies like DBS Bank and KPMG. Since 2020, he has contributed to key governmental initiatives as a member of the Information Technology Standards Committee (ITSC) at ESG Singapore and the Infocomm Media Development Authority (IMDA). Moreover, Xiaoli serves as a health innovation expert panel member for the Ministry of Health (MOH), an expert panel member for the Ministry of Education (MOE), and an AI advisor for the Smart Nation and Digital Government Office (SNDGO) at the Prime Minister's Office, showcasing his pivotal involvement in both government and industry sectors.

With a broad spectrum of research interests, Xiaoli focuses on cutting-edge domains such as AI, data mining, machine learning, and bioinformatics. His significant contributions are reflected in his extensive publication portfolio, comprising over 350 peer-reviewed papers and earning him numerous accolades, including over ten best paper awards. As Editor-in-chief of the Annual Review of Artificial Intelligence and an Associate Editor for esteemed journals like IEEE Transactions on Artificial Intelligence and Knowledge and Information Systems, Xiaoli plays a crucial role in shaping academic discourse. Additionally, he chairs conferences and serves as an area chair for leading AI, machine learning, and data science conferences such as AAAI, IJCAI, ICLR, NeurIPS, KDD, and ICDM.

Beyond academia, Xiaoli leverages his wealth of experience to drive impactful R&D projects, having successfully led over 10 initiatives in collaboration with prominent industry players across sectors such as aerospace, telecom, insurance, and professional services. Recognized as an IEEE Fellow and a Fellow of the Asia-Pacific Artificial Intelligence Association (AAIA), Xiaoli's expertise is acknowledged globally. Stanford University has identified him as one of the top 2% scientists in the AI domain, while Research.com ranks him among the top computer scientists worldwide.

Understanding Computability Net: A Distributed System Perspective



Hai Jin, Professor, IEEE Fellow
Huazhong University of Science and
Technology, China

Computability net provides opportunities to transcending state-of-the-art technologies in AI, computing and network. This talk will delve into the evolution and architectural design of computability net from the perspective of distributed systems, tracing traditional models like grid and cloud computing to modern computability networks. The discussion will then focus on the specific challenges posed by computability net, particularly in terms of managing heterogeneous compute nodes and network connections. Architectural strategies that effectively address these challenges and facilitate optimal resource allocation across multiple computing centers will be explored. Additionally, the talk will indicate the diverse applications of computability networks in areas such as AI, scientific computing, and beyond, demonstrating their wide-reaching impact and potential.

Bio

Hai Jin is a Chair Professor of computer science and engineering at Huazhong University of Science and Technology (HUST) in China. Jin received his PhD in computer engineering from HUST in 1994. In 1996, he was awarded a German Academic Exchange Service fellowship to visit the Technical University of Chemnitz in Germany. Jin worked at The University of Hong Kong between 1998 and 2000, and as a visiting scholar at the University of Southern California between 1999 and 2000. He was awarded Excellent Youth Award from the National Science Foundation of China in 2001.

Jin is a Fellow of IEEE, Fellow of CCF, and a life member of the ACM. He has co-authored more than 20 books and published over 900 research papers. His research interests include computer architecture, parallel and distributed computing, big data processing, data storage, and system security.

Security Analytics and Big Data Challenges



Aghi M. Khoshgoftaar, Professor
Florida Atlantic University, USA

cybercrime now costs trillions of dollars annually. Machine learning can help to detect cyberattacks in big data, but it needs to overcome several challenges to be effective. Like the proverbial “needle in a haystack” analogy, severe class imbalance can cause machine learning classifiers difficulty. To compound this problem further, class rarity is not uncommon where only very few instances are available from the positive class causing classifiers further trouble in being able to discriminate between the classes. We evaluate applying sampling techniques to treat the class imbalance problems for detecting cyberattacks in big data. Properly preprocessing the input data is an important step, and we discuss data quality issues of the input features. Finally, we cover how feature selection can also be helpful for detecting cyberattacks in big data.

Bio

Dr. Taghi M. Khoshgoftaar is Motorola Endowed Chair professor of the Department of Computer and Electrical Engineering and Computer Science, Florida Atlantic University and the Director of NSF Big Data Training and Research Laboratory. His research interests are in big data analytics, data mining and machine learning, health informatics and bioinformatics, social network mining, security analytics, fraud detection, and software engineering. He has published more than 850 refereed journal and conference papers in these areas. He was the conference chair of the IEEE International Conference on Machine Learning and Applications (ICMLA 2019 and ICMLA 2016). He is the Co-Editor-in Chief of the journal of Big Data. He has served on organizing and technical program committees of various international conferences, symposia, and workshops. Also, he has served as North American Editor of the Software Quality Journal and was on the editorial boards of the journals Multimedia Tools and Applications, Knowledge and Information Systems, and Empirical Software Engineering and is on the editorial boards of the journals Software Quality, Software Engineering and Knowledge Engineering, and Social Network Analysis and Mining.

Blockchain solutions and Made in Italy



Roberto Tonelli, Professor
University of Cagliari, Italy

CBlockchain technology is impacting everyday life offering new perspectives, applications and business opportunities in sectors such as e-commerce, identity management, utilities exchange and so on. This talk will assess a short comparison among different Blockchain technologies and will examine the more recent trends and perspectives on the applications of this technology to certify provenance of goods in supply chains for national products and in particular to certify “Made in Italy” productions. Italian and European blockchain solutions will be examined.

Bio

Roberto Tonelli is Full Professor of Informatics at the University of Cagliari’s Department of Mathematics and Computer Science. He’s been Coordinator for the Ph.D. program in Mathematics and Informatics at University of Cagliari. He has been awarded for his influential blockchain research (50 Topmost influential paper in 2018) by “Blockchain Connect Conference” – San Francisco Jan 2019.

He founded the academic spin-off “Agile By Chain”, which provides services and consultancies on blockchain technologies. He is the National Appointee for former MISE (Italian Ministry of Economic Development) for EBP (European Blockchain Partnership) Appointment of National Representatives, Appointment of representatives for the new EBSI use cases EUROPEAN SELF-SOVEREIGN IDENTITY/EIDAS WORKING GROUP (from 2020 ongoing).

He has two Ph.D. titles, in Physics and in Software Engineering and has been visiting researcher at Electrical Engineering and Computer Science Dept. Berkeley University, California (2000/01 and 2006/07) and at University of Maryland, Washington DC (1999). He authored more than 150 papers with about 5000 citations on scholar and H-index 37.



Practices of Machine Learning and Optimization with Quantum Computing



YuXiang Chen

IBM Distinguished Engineer, IBM

In many cases, real problems need to involve both Machine Learning and Optimization, we usually start from building predictive models based on “data” when lack of insight, but after that, sometimes we intend to rebuild models based on “rules” to find an optimal solution. This talk will introduce few practical ways to leverage Quantum Computing to accelerate problem solving on both AI (Artificial Intelligence) and OR (Operational Research), including full space searching, dot-production of functions, etc. Powered by the next generation computer in future, we could improve both speed and accuracy in real world problems solving.

Bio

YuXiang CHEN is a Distinguished Engineer from IBM, most working on designing software solutions with the new technologies and solving real problems for clients, His research interests most focus on AI and Quantum, As a leader of IBM CTO office and IBM Open Innovation Community, he is leading many innovations and run IBM internal academy education in Great China as well, covering Machine Learning, Deep Learning, Quantum Computing and Optimization. In recent years, he published 5 books and many patents on these areas.

YuXiang has rich experience on architecture design and Banking industry solutions, he is both IBM certified IT specialist and architect for many years. In most recently, he is working on put all these technologies together in practical industry solutions.

Research and Application of Forestry Artificial Intelligence



Fu Xu, Professor
Beijing Forestry University, China

Content: Introduce the main problems currently faced by forestry and how artificial intelligence can solve these problems. Combining several typical cases, introduce the latest progress of forestry artificial intelligence.

Bio

Fu Xu, Professor of Beijing Forestry University (BJFU), Dean of School of Information Science and Technology of BJFU, Dean of School of Artificial Intelligence of BJFU, Chief Scientist of National Key R&D Program, Chief Scientist of Emergency Open Competition Project of National Forestry and Grassland Administration



Tutorials

Testing and Automation for Intelligent Computer Vision and Applications



Jerry Gao, Professor

San Jose State University, USA
Computer Engineering Department and Applied Data Science
Department, San Jose State University
Director of Research Center of Smart Technology and Systems
Co-Funder and CTO of ALPS-Touchtone, Inc.

Dr. Jerry Gao is a professor at San Jose State University for Computer Engineering Department and Applied Data Science Department. Now, his research interest includes Smart Machine Cloud Computing and AI, Smart Cities, Green Energy Cloud and AI Services, and AI Test Automation, Big Data Cyber Systems and Intelligence. He has published three technical books, one of the books is the first book on object-oriented software testing (1998), and his second book is titled as Testing and Quality Assurance for Component-based Software, which is the first book on component-based software systems. hundreds (320) publications in IEEE/ACM journals, magazines, international conferences. His research work has received over 88K+ citations (in Google Scholar), and reached to over 330K+ readings on ResearchGate. Since 2020, Dr. Gao has served as the chair of the steering committee board for IEEE International Congress on Intelligent Service-Oriented Systems Engineering (IEEEICISOSE), and Steering Committee Board for IEEE Smart World Congress. He had over 25 years of academic research and teaching experience and over 10 years of industry working and management experience on software engineering and IT development applications.

Background:

According to the recent market analysis by Global Market Insight (GMI), the global automation testing market size will be anticipated to cross USD 80 billion in 2032. With the fast advances in machine learning models and AI technologies, more and more intelligent systems and applications, including smart computer vision systems, are being developed for real deployment and applications.

Before the deployment of these intelligent systems, it is important and critical for intelligent system testers, quality assurance engineers, and young generations to understand the issues, challenges, and needs as well as state-of-the-art AI testing tools and solutions in testing and quality assurance for modern intelligent systems and smart mobile apps, and smart machines (smart Robots, driverless AVs, and intelligent UAVs). With the big heat of ChatGTP in the business market, many people have started to pay attention to the quality of AI applications systems and deployment.

Why quality AI testing and automation of Computer Vision is important?

Today, many intelligent computer vision systems have been trained based on computer vision big data and developed using data-driven computer vision models. There are two types of computer vision data: a) object-oriented computer vision photos and b) document-based images. Testing engineers and quality assurance people have encountered many challenges in testing and automation of computer vision systems and applications: intelligent features and AI-powered functions bring new issues and challenges to testing intelligent computer vision applications and quality assurance due to the following reasons:

How to establish test requirements, validation models, and quality assurance standards for computer vision systems/applications?

- Lack of well-defined quality testing and analysis models and quality requirement specification approaches.
- Lack of well-defined quality assurance standards for computer vision system analysis and modeling methods

Where are the cost-effective quality validation methods for computer vision systems/applications?

- Current software validation methods are not good enough to support computer vision systems because these methods are not designed to address the demands and needs of computer vision systems.
- There is a lack of well-defined quality validation methods for computer vision systems.

High costs to define and generate adequate test sets for computer vision

- Lack of well-defined test models and methods to help testers and QA engineers to define and select adequate test sets because most AI-powered system functions (or components) are trained based on big data using diverse machine learning.
- Most existing software system test methods were developed for conventional software without considering special features and needs in intelligent systems.

How to validate large-scale test results in automatic ways?

- AI-based functions may bring uncertainty in system results.
- The highly diversity of test results and system outputs bring the new challenges and needs in test automation.

Hard to find systematic test tools supporting rich-media input/outputs

- AI-powered intelligent systems usually accept multiple-mode inputs in text, image, audio, and video.
- Current software testing tools and solutions do not support rich media input data, and rich media output data validation.

Who should attend this tutorial?

Test engineers, quality assurance engineers, and managers who are responsible for quality testing and assurance for modern intelligent systems and AI-powered smart computer vision systems, including mobile and online applications built-in based on modern computer vision models and techniques. In addition, researchers and students are encouraged if they are interested in AI system testing, automation, and quality assurance.

What you learned from this tutorial? What is the coverage of this tutorial?

Table of contents (outline):

Introduction on computer vision and applications	o Intelligence-oriented multiple dimension test models
o Test automation market for computer vision and intelligent applications	o Intelligence-oriented multiple dimension decision test tables
o An overview of computer vision and applications	Test generation and AI-based test data generation for computer vision applications
o A classification of diverse computer vision and applications	o AI-based test case generation for computer vision images
What to test for computer vision and applications?	o AI-based test data generation and augmentation for computer vision images
o Major test focuses and intelligence validation	o AI-based test generation for document-based computer vision intelligence
o Major challenges, issues, and needs in computer vision validation	o AI-based test augmentation for document-based computer vision intelligence
Adequate quality needs	Test result validation for intelligent computer vision systems
Quality testing process and validation methods	Quality computer vision system validation for QoS system parameters
o Computer vision quality process	Test automation for intelligent computer vision and applications
o Different computer vision approaches	Quality evaluation metrics and test coverage for computer vision
o Model-based quality testing methods for computer vision	
AI test modeling for intelligent computer vision systems	
o Intelligence-oriented test modeling and analysis for computer vision	

In addition, Dr. Gao will provide two show-cases and project demos on sample computer vision test automation.

Datamorphic Testing: Principles, Tools and Applications to Machine Learning



Hong Zhu, Professor

School of Engineering, Computing and Mathematics
Oxford Brookes University, UK

Dr. Hong Zhu is a professor of computer science at the Oxford Brookes University, Oxford, UK, where he chairs the Cloud Computing and Cybersecurity Research Group. He obtained his BSc, MSc and PhD degrees in Computer Science from Nanjing University, China, in 1982, 1984 and 1987, respectively. He was a faculty member of Nanjing University from 1987 to 1998. He joined Oxford Brookes University in November 1998. His research interests are in software development methodologies, including software engineering for cloud native applications and intelligent systems, software design, programming languages and automated tools, software modelling and testing. He has published 2 books and more than 200 research papers in journals and international conferences. He is a senior member of IEEE, a member of British Computer Society, and ACM.



Datamorphic testing methodology regards software testing as a system engineering process in which a test system is developed, maintained, evolved and operated to achieve software testing purposes. It defines software test systems as consisting of a set of test entities and test morphisms, where the former are the objects, data, documents etc created, used and managed during testing process while the latter are the operators and transformers on the test entities. Typical examples of test morphisms include test case generators, data augmentations (which are called datamorphisms), test oracles (which are called metamorphisms), test adequacy metrics, etc. One of the most important principles of datamorphic testing methodology is that a test system should be explicitly defined and implemented, especially when testing is complicated and expensive. The principles of the datamorphic testing methodology has been applied to a number of testing problems for machine learning applications, including confirmatory testing of ML models such as face recognition and object identification in autonomous vehicle's perception, exploratory testing of ML classifiers such as for evaluation of robustness and adversarial attacks, and to scenario-based functional testing for improve ML model performances.

In this tutorial, with examples of testing machine learning applications, we will learn how to develop such test system to ensure testing to be of high quality and conducted effectively and efficiently. In particular, we will learn how to represent and implement testing resources in test systems with the support of an automated datamorphic testing tool Morphy. We will also demonstrate how to achieve test automation using Morphy at three different abstract levels. At activity level, testing actions can be performed by invoking test morphisms. At the strategy level, test strategies can be formally defined as algorithms with test entities and test morphisms as parameters and applied via invoking the corresponding algorithms. At process level, the activities and the application of strategies can be recorded to form test scripts, which can be edited and replayed. Since such test scripts are at a higher level of abstraction than traditional test scripts, they are more reusable and less fragile to modification to the software under test.

The tutorial will consist of three parts: (1) the principles and basic concepts of datamorphic testing methodology, (2) the automated testing tool and test environment Morphy that supports datamorphic testing methodology, and (3) the applications to machine learning models.



GenAI

GenAI, Where Are You Going?

The past three years have seen a rapid growth of generative AI (GenAI) technology. Several multi-modal large language models have been developed such as ChatGPT, Gemini and Sora, etc. They have demonstrated an impressive capability of generating contents and performing a wide range of natural language processing tasks including reasoning, programming, even producing images and video clips from text instructions. It is widely perceived that the technology is rapidly advancing towards an artificial general intelligence and will fundamentally change the world by revolutionise the ways we work and live. The panel invited a few active researchers from the academics and practitioners from the industry. Each panellist will give a short position statement to present their visions on the following issues related to generative AI.

- 01 - The directions that GenAI would move forward, including the applications in both short and long terms.
- 02 - The impacts that GenAI would make on our society, especially, the benefits and risks that GenAI could bring with.
- 03 - The challenges that it will confront both researchers and practitioners, particularly, how to monitor, detect, evaluate prevent, and minimise the risks.

As usual, the audiences will engage in the panel discussion to raise their concerns, express their opinions, and ask questions to the panellists. As a novel features of the panel, we will employ ChatGPT also to answer the questions as a virtual panellist.

Panellist

Prof. Hong Zhu (Moderator)

Oxford Brookes Univ., UK

Dr. Hong Zhu is a professor of computer science at the Oxford Brookes University, Oxford, UK, where he chairs the Cloud Computing and Cybersecurity Research Group. His research interests are in software development methodologies, recently focusing on cloud-native and machine learning software engineering. He has published 2 books and more than 200 research papers in journals and international conferences. He is a senior member of IEEE, a member of British Computer Society, and ACM.



Prof. Xiaoli Li

Inst. for Infocomm Research, Singapore

Dr. Xiaoli Li is currently a principal scientist at the Institute for Infocomm Research, A*STAR, Singapore. He is also the department head of the Machine Intelligence department, which consists of 100+ AI and data scientists. It is the largest AI and data science group in Singapore. He has also held an adjunct professor position at Nanyang Technological University, Singapore, for 6 years. He is an IEEE Fellow and Fellow of Asia-Pacific Artificial Intelligence Association (AAIA). Xiaoli is also serving as KPMG-I2R joint lab co-director. He has been a member of Information Technology Standards Committee (ITSC) from ESG Singapore and Infocomm Media Development Authority (IMDA) since 2020. Moreover, he serves as a health innovation expert panel member for the Ministry of Health (MOH), expert panel member for Ministry of Education (MOE), as well as an AI advisor for the Smart Nation and Digital Government Office (SNDGO), Prime Minister's Office, highlighting his extensive involvement in key Government and industry initiatives.



Prof. Junhua Ding

University of North Texas, USA

Dr. Junhua Ding is the Reinburg Endowed Professor in Data Science at the University of North Texas (UNT), where he focuses on data science research and education. His current research areas include data quality, automated software engineering, and biomedical computation. His work aims to enhance the understanding and implementation of data management, quality assurance, and the application of computational and learning techniques to legal and biomedical fields. Before joining UNT in 2018, he held academic positions at East Carolina University and worked as a Senior Engineer at Johnson & Johnson and a Software Engineer at Beckman Coulter Inc.





Dr. Emese Bari

Visa Inc., USA

Dr. Emese Bari is the Vice President at Visa Inc, USA, since January 2017, where she leads the Digital and Mobile Software Development department. She manages mobile engineering, Java platform development, web application development, test engineering, performance engineering and integration solutions of mobile payment applications. She is also a part time professor at Notre Dame de Namur University, CA, USA. Prior to Visa, she was Vice President of Engineering Solutions at Flexton Inc, USA, where she led the Engineering Solutions department and was responsible for planning and delivering custom software solutions to the clients, among them LinkedIn, Walmart, Stubhub, etc. Dr. Bari also worked for 4 years as the Director of Global Solutions Engineering and Customer Quality at PayPal, and 8 years as QA Director at eBay, and has many other industry experiences at VeriSign, InsWeb and Aeroflot Int'l Airlines, etc. Her current research interests are artificial intelligence in software error detection, test automation solutions in the mobile space and error prevention in globally scalable fault tolerant software programs.



Dr. Yang Liu

MeiTuan.com, China

Dr. Yang Liu is currently employed by MeiTuan as Director of QA since 2021. He leads the team that looks after the logistic systems in Best Select business, which is an e-commerce platform with around 10 million orders per day. Before MeiTuan, he led the QA team at Booking.com, where he drove multiple test automation projects and developed the quality strategy for the accommodation business unit. Yang also has experiences at National Australia Bank, IRESS, Alibaba and Baidu. His team has built partnership with research teams including Oxford Brookes University, University of Wollongong, Beijing University of Aeronautics and Astronautics, Kristiania University College and University of Oulu. He is interested in quality engineering of machine learning, model-based software testing, test case automatic generation and technical debt detection.



ChatGPT (Virtual Panellist)

OpenAI, USA.

ChatGPT is a chatbot and virtual assistant developed by OpenAI and launched on November 30, 2022. Based on large language models (LLMs), it enables users to refine and steer a conversation towards a desired length, format, style, level of detail, and language. Successive user prompts and replies are considered at each conversation stage as context. ChatGPT is credited with starting the AI boom, which has led to ongoing rapid investment in and public attention to the field of AI. By January 2023, it had become what was then the fastest-growing consumer software application in history, gaining over 100 million users and contributing to the growth of OpenAI's current valuation of \$86 billion. ChatGPT's release spurred the release of competing products, including Gemini, Claude, Llama, Ernie, and Grok. ([1])

[1] The introduction to ChatGPT is from Wikipedia.

Sustainable AI

Sustainable AI: Pursuing Computational Efficiency and Environmental Harmony

Abstract: The panel aims to foster a critical and insightful discussion on the sustainable development of AI, examining both the ethical and environmental implications of its widespread use and the strategies to ensure its responsible growth and integration into society. The following key topics will be addressed in this panel include:

01

- Sustainable AI Infrastructure: Given the exponential expansion of data storage and the computational demands of AI, it's important to monitor and optimize energy consumption at various layers of the full AI stack.

02

- Environmental Impact, Standard and Assessment: We'll discuss the relationship between AI and environmental impact including how AI impacts environment, how to measure and assess the impact, and how AI can help address environmental challenges.

03

- Ethical Consideration of AI: The confluence of privacy, bias mitigation, and equitable decision-making in AI necessitates a robust ethical framework and technologies. The panel will discuss and share real-world practices. We expect to trigger wider interest and considerati

We expect to trigger wider interest and considerations of sustainability aspect of AI and exchange ideas, insights, case studies, and the latest findings. Attendees will have the opportunity to participate in the conversation, asking questions and contributing to the dialogue on shaping a sustainable AI landscape.

Panellist

Fanjing Meng(Moderator)

CTO, IBM China Systems Lab, China



Dr. Fanjing Meng is an STSM and CTO of IBM China Systems Lab (CSL). She has 20+ years research experience in various areas including Full-Stack Sustainability Optimization, AIOps (AI for Cloud/IT operations), IT Operations Analytics (ITOA), Cloud Computing, Software/Solution Engineering, Project Portfolio Management and Optimization (PPMO), Cloud Migration, Enterprise Knowledge Extraction and Management, Model driven Business Transformation, Computer Integrated Manufacturing System (CIMS). She is now working with CSL technical leaders to drive product/technology innovations, increase technical eminence, and develop technical skills and talents for the lab. Meanwhile, she is serving as TPC chair and members for Top international conferences and a reviewer of international journals. She has published 30+ papers and received the “Best Paper Award” from IEEE CLOUD 2013. She has 50+ patents and patent applications in various innovation areas.

Shuguang Qi

Professor in Engineering and Vice chief Engineer of China Communication Technology Labs-Systems of CAICT (China Academy of Information and Communication Technology) of MIIT, China



Shuguang Qi graduated from Beijing university of posts and telecommunications in 2007 and holds a master's degree in computer science. She has been working in the field of green and low carbon ICT for more than 10 years. Currently she is the Vice Chief Engineer of China Telecommunication Technology Labs (systems) in China Academy of Information and Communication Technology (CAICT) and professor in Engineering. Her focuses include fundamental Research, prospective study and standardization work in sustainable development and carbon Neutrality. She is also Vice Chair of ITU-T Study Group 5; Chair of the ITU-T Study Group 5 Asia pacific regional group; and Chair of Working Group 1 / Technical Committee 4(Power and environment for ICT) in China Communication Standardization Association (CCSA). She is also very active in IEC TC22 and IEC SyC LVDC. She developed around 20 Recommendations as a chief editor in ITU such as ITU-T L.1210, ITU-T L.1380 series Recommendation on sustainable development. Moreover, she developed more than 20 Chinese standards including National standards, industrial standard, and regional standards. She has got first prize scientific rewards from China Institute of Communications and first prize scientific reward from CCSA.

Chao Li

Professor and Director of Sustainable Architecture and Infrastructure Lab, Shanghai Jiao Tong University (SJTU), China



Dr. Chao Li is currently a Full Professor at Shanghai Jiao Tong University, and he holds the Sun Yong Qiang Young Professorship in the Department of Computer Science and Engineering. Dr. Li is broadly interested in computer architecture design with an emphasis on scalability and sustainability. He is a recipient of the University of Florida's Gator Engineering Recognition Award (2010), the Yahoo! Key Scientific Challenge Award in Green Computing (2012), the Facebook Fellowship (2013), the Intel Young Faculty Research Award (2016), and the China Computer Federation Young Elite Scientists Award in 2017. He has also received the IEEE TCSC Award for Excellence in Scalable Computing (Early Career) in 2018. Dr. Li has published over 90 technical papers on important conferences/journals, and he has received the IEEE HPCA Best Paper Award in 2011 and the IEEE ICCD Best Paper Award in 2018. He is also an inventor on over 15 Chinese and international patents, several of which have been adopted by the industry. Dr. Li has served as Associated Editor of IEEE Transactions of Computers, Program Co-Chair of the 39th IEEE International Symposium of Reliable Distributed Systems (SRDS 2020) and has served on numerous program committees. Dr. Li is currently the vice Chair of the China Computer Federation Technical Committee on Computer Architecture (CCF TCARCH). He earned his BS degree from Zhejiang University in 2009, and his PhD degree from the University of Florida in 2014. He is a senior member of IEEE and ACM.

Ethical, Societal, and Policy Implications of AI

Artificial Intelligence (AI) has rapidly evolved, offering transformative potential across various sectors, including healthcare, finance, education, and transportation. However, its deployment raises significant ethical, societal, and policy concerns that have necessitated careful consideration and action since its inception. This panel will discuss the multifaceted implications of AI, focusing on ethical dilemmas such as privacy, bias, transparency, and accountability, as well as the broader societal impacts on employment, social equity, and human interaction. Additionally, it examines the current state of AI policy and governance, highlighting the need for comprehensive frameworks that balance innovation with responsible AI or Machine Learning (ML) use. This panel will discuss these critical issues and aims to contribute to the current and future development of AI systems that are not only technologically advanced but also ethically sound and socially beneficial.

01

- The directions that where we are going in the design, development, and deployment of AI systems and how to control these parallel increases in hype, myths, misconceptions and inaccuracies.

02

- The AI acts that how it will govern the organization and individuals while using current and future AI systems to maximize societal benefits in the long run.

03

- The challenges that it will encounter are how ethical metrics integrate from design to deployment of current and future AI systems as well as having standard metrics for assessing and verifying them before societal use.

In parallel with panelists, audiences will also contribute to the discussion. They may raise their concerns, express opinions, and ask questions to the panellists. The results of this discussion would help AI systems designers, developers, practitioners, and policymakers for the benefit of society.

Panellist



Dr. Monowar Bhuyan (Moderator)

Umeå Univ, Sweden

Dr. Bhuyan is an Assistant Professor of Computer Science at Umeå University, Sweden. He leads Cyber Analytics and Learning Group, which is an integrated part of the Autonomous Distributed Systems Lab. Before this, he worked for Nara Institute of Science and Technology, Japan, Umeå University, Sweden, Assam Kaziranga University, India and Tezpur University, India from January 2009 to December 2019, respectively. His research interests are machine learning, anomaly detection, systems and AI security, and responsible AI. He has published over 90 papers in leading international journals and conference proceedings and has written a book with Springer.



Dr. Lingzi Hong

Univ. of North Texas, USA

Dr. Hong is currently an Assistant Professor of Data Science in the College of Information at the University of North Texas. Her research is situated in computational social science, where she applies computational linguistics and user behavior modeling methods to investigate how users interact with and are impacted by sociotechnical systems. She has published in top-tier computer science conferences and journals such as AAAI, NAACL, ICWSM, EMNLP, and IJHCI. She serves as the co-chair for the Association for Information Science and Technology (ASIS&T) IDEA (Innovation, Disruption, Enquiry, Access) Institute on Artificial Intelligence (AI) and the Chair-Elect of ASIS&T SIG Social Media.



Prof. Junhua Ding

Univ. of North Texas, USA

Dr. Junhua Ding is the Reinburg Endowed Professor in Data Science at the University of North Texas (UNT), where he focuses on data science research and education. His current research areas include data quality, automated software engineering, and biomedical computation. His work aims to enhance the understanding and implementation of data management, quality assurance, and the application of computational and learning techniques to legal and biomedical fields. Before joining UNT in 2018, he held academic positions at East Carolina University and worked as a Senior Engineer at Johnson & Johnson and a Software Engineer at Beckman Coulter Inc.



2024 IEEE FTS Keynote Speakers



**AI: where did it
come from and where is it going**

Ronjon Nag

Adjunct Professor in Genetics, Stanford School of Medicine
– AI and Longevity papers here Fellow, Stanford Center for
the Study of Language and Information President, R42 Group

Presentation Abstract

Artificial intelligence is in the news daily. Where did it come from, and where is it going? The field arguably dates back to Alan Turing in 1936 and perhaps even earlier. Modern AI is based on neural networks popularized in the 1980s and now have been morphed to generative AI and large language models. Large language models have commoditized the accessibility of AI to all, resulting in exponential creativity and applicability. With possibility that AI will be cleverer and quicker than humans in every request, we will discuss the societal and ethical issues surrounding the real-world applications of AI and consider what the future of AI can hold and what barriers need to be overcome with current AI models.

Short Bio

Dr. Ronjon Nag is a renowned inventor, entrepreneur, and educator, with over 40 years of experience in developing AI technologies for smartphones, neural networks, and biotechnology. He is the Founder and President of R42 Group, a family office and venture group that invests primarily in AI, biotechnology, and science, and supports pre-seed stage companies in their growth journey.

He is also an Adjunct Professor in Genetics in the Stanford School of Medicine and a Visiting Fellow at the Stanford Center for Language and Information (CSLI), where he teaches popular courses on AI, Genes, Ethics, Longevity Science, and Venture Capital. He is a Fellow and Trustee of the Institution of Engineering and Technology (IET) and a Lifetime Member of the ACM. He has won multiple prestigious awards, including the IET Mountbatten Medal, the Verizon Powerful Answers Award, the COGX AI Lifetime Achievement Award, the MIT Great Dome Award and is the 2024 Silicon Valley Engineering Council Hall of Fame Inductee. He is a founder, advisor, board member, and part owner of some 100 AI and Biotech start-ups, and has sold his companies to Apple, BlackBerry, and Motorola. He is passionate about inventing, informing, and investing in the future of humanity. He has a BSc (Birmingham), an MS (MIT), and a PhD (Cambridge).

He has accomplished many firsts:

- First laptop with speech recognition built-in (UK: Apricot Computers, 1984)
- First selling cursive handwriting recognition system (with Lexicus, 1992)
- First Chinese speech recognition dictation system (Lexicus/Motorola, 1996)
- First speech recognition phones (Lexicus/Motorola, 1995)
- First Chinese predictive text system on a phone (Lexicus/Motorola, 1997)
- First predictive text systems in large volume (40 languages) on phones (Lexicus/Motorola, 1997)
- First touch screen phone with apps, HTML browser, speech & handwriting recognition (Lexicus/Motorola, 1999)
- First combined mobile app store and search engine (with Cellmania, 2000-2010)
- First operator billable BlackBerry App Store (2011)
- First Neural Network Artificial Intelligence System in the Cloud (Ersatz Labs, 2014)
- First Wireless Throwable Camera (Bounce Imaging, 2015)
- First Android powered smarthome lightswitch (Brightswitch, 2017)
- First continuous blood pressure wearable (GT Cardio 2019)
- First holographic phone call (R42 – Vivid-Q 2021)
- First AutoML AI platform for biologists requiring no code (Superbio.ai 2021)
- Proposed the first vaccine for aging developed using AI (Agemica.ai 2023)



Data Assets as Digital Assets in Web3

Wei-Tek Tsai

Professor, Arizona State University, Tempe, Arizona, USA
Fuzhou University, Fuzhou, China

Presentation Abstract

Recently two concepts, data assets and digital assets, have received significant attention. However, a close examination of these concepts show that while both are considered as “digital” assets, but these two concepts have not encountered each other with respect to underlying technology, protocols and infrastructure.

Data assets currently emphasize on the “data” aspects, such as related to database technology like data collection, cleansing, analytic, valuation, IP and copyrights, and artificial intelligence. The tough problems of data assets are related to valuation, ownership, protection, and privacy.

Digital assets currently focus on Real-World Assets (RWA), smart contracts, blockchain, transactions, exchanges, wallets, regulations such as KYC (Know Your Customer) and AML (Anti-Money Laundering), and face a different sets of tough problems such as transaction models, settlement mechanisms, new Internet architecture and protocols.

In this talk, we propose data assets to be treated as digital assets, and use the protocols and infrastructure initially designed for digital assets for data assets. In this way, the tough problems of data assets can be addressed, and data assets and other digital assets can be treated in an uniform manner on the Web.

Currently, there are multiple definitions for the next-generation Internet, or Web3. A specific definition of Web3, as proposed by EU Commission in 2017, is an Internet of human, or an Internet of trust, and EU has initiated large Web3 projects. Following the EU Web3 definition, data assets must be protected and trusted like digital assets. As the EU version of Web3 is fundamentally different from the current Internet (Web2) , if we treat data assets as digital assets, the market and transaction model for data assets will be fundamentally changed.

Short Bio

Wei-Tek Tsai received S.B. in Computer Science & Engineering, Massachusetts Institute of Technology (MIT), Cambridge, MA, USA, and M.S. and Ph.D. in Computer Science, University of California at Berkeley, Berkeley, CA, USA. He has been a professor at several universities including University of Minnesota, Arizona State University, and Fuzhou University. He has authored more than 600 papers and 9 books, H-index 67. He has done research in blockchain, sandbox systems, distributed systems, computer networks, and software engineering.



Optimizing Training for Large Language Models: Balancing Various System Forces

Jie Xu

Chair of Computing at the University of Leeds

Presentation Abstract

In this presentation, we will share our recent experience in designing and implementing a system for training large language models (LLMs) with billions of parameters. Our focus will be on balancing various system requirements and design objectives, such as effectiveness and efficiency.

We introduce a theorem of “Impossible Trinity of System S_m ” where S_m is a system designed and implemented for training LLMs. This theorem provides guidance for balancing different design requirements and informs various design options to make LLM training more cost-effective and efficient. The theorem formalizes three desirable objectives of LLM training systems and asserts that it is impossible to achieve all three simultaneously within S_m . Therefore, system designers must prioritize two out of the three properties based on the specific requirements and constraints of their application. We will use several practical examples to illustrate how to design and implement a well-balanced LLM training system.

Short Bio

Professor Jie Xu is Chair of Computing at the University of Leeds, Director of the UK White Rose Grid e-Science Centre, involving the three White Rose Universities of Leeds, Sheffield and York, a co-Leader of the EPSRC-funded UK National Hub in Clouds and Distributed Computing, and Head of the Distributed Systems and Services (DSS) Theme at Leeds. Xu has worked in the field of Distributed Computing Systems for over thirty-five years, engaging closely with industrial leaders in the field. He received a PhD in Computing Science from the University of Newcastle upon Tyne, and was Professor of Distributed Systems at the University of Durham before joined Leeds in 2003.

Professor Xu is an executive member of UKCRC (UK Computing Research Committee) and a Turing Fellow in AI and Data Science. He has served as an academic expert for numerous governments and industries, such as Singapore IDA, Lenovo, UK EPSRC, and UK DTI (InnovateUK). In addition, he has extensive editorial experience, having served as an editor for IEEE Distributed Systems from 2000 to 2005, and currently acting as an associate editor of IEEE Transactions on Parallel and Distributed Systems and ACM Computing Surveys. Professor Xu is a Steering Committee member for several prestigious IEEE conferences, such as SRDS, ISORC, HASE, SOSE, JCC, and CISOSE, as well as serving on the steering board of IEEE TC on BIS. He has also been a General Chair/PC Chair for various IEEE international conferences. With over 300 academic publications, including papers in top-ranked IEEE and ACM Transactions, Professor Xu has received international research prizes, such as the BCS/AT&T Brendan Murphy Prize, and led or co-led more than 20 research projects worth over £30M. He is also the co-founder of two university spin-outs that specialize in data analytics and AI software for optimizing data centre performance and in co-simulation and digital twins.



Scenario-based Testing and Evaluation of Large Language Models for Code Generation

Hong Zhu

Professor of computer science at the Oxford Brookes University, Oxford, UK

Presentation Abstract

One of the most valuable capabilities of large language models (LLM) like GPT and Gemini etc. is to generate program code with natural language input. However, it remains an open question that how well such LLMs performs in real-world practical uses. In this talk, we report our ongoing efforts in the development of benchmarks and automated test systems, our experiments with testing ChatGPT's capability of generating Java and R programs, and the evaluations of its usability using a scenario-based methodology. We will share our novel technology that enables effective and efficient scenario-based testing of machine learning (ML) through benchmarks marked-up by metadata, new quality attributes and metrics of ML usability, and a datamorphic test system to achieve test automation, etc. We will also report our discoveries and the main results, discuss the directions for future research.

Short Bio

Hong Zhu is a professor of computer science at the Oxford Brookes University, Oxford, UK, where he chairs the Cloud Computing and Cybersecurity Research Group. He obtained his BSc, MSc and PhD degrees in Computer Science from Nanjing University, China, in 1982, 1984 and 1987, respectively. He was a faculty member of Nanjing University from 1987 to 1998. He joined Oxford Brookes University in November 1998. His research interests are in software development methodologies, including software engineering of cloud-native applications, software engineering of AI and machine learning applications, formal methods, software design, software testing, programming languages, software modelling, and automated software engineering tools and environments, etc. He has published 2 books and more than 200 research papers in journals and international conferences. He is a senior member of IEEE, a member of British Computer Society, and ACM.



Aligning AI with “Sustainable AI for Humanity”

James Ong

Founder & Managing Director, Artificial Intelligence International Institute (AIII) and Adjunct Professor, Singapore University of Technology & Design (SUTD) & AI Mega Centre

Presentation Abstract

AI Alignment is one of the most controversial and urgent challenges faced in AI today. With the dissolution of the SuperAlignment project at Open AI with the departure of key executives leading the project, it shows that the complexity and uphill tasks faced. James will share his perspective how to tackle AI Alignment with the proposed holistic approach of “Sustainable AI for Humanity” balancing AI technology, commercialisation and governance.

Short Bio

Dr. James Ong has 38+ years of experience as an entrepreneur, tech executive, venture builder, author and professor and enjoys his journey of ecosystem building for impactful outcomes, bridging scientific research, startups, and impact investment. He founded Artificial Intelligence International Institute (AIII), a think tank advocating Sustainable AI for Humanity and is co-author of “AI for Humanity: Building A Sustainable AI for the Future” (ISBN: 9781394180301), to be published by Wiley on June 4, 2024. He is CEO of Origami Frontiers, a venture building firm, Venture Partner at Delight Capital, Partner at Hashtaq and Adjunct Professor at SUTD and AI Mega Centre. He received his PhD from University of Texas at Austin specializing in AI for Governance and Business Process Automation.





Smart Agriculture Machine Learning for Today and Tomorrow Using Satellite, Remote Sensing UAV, and IOT Big Data

Jerry Gao

Professor, Computer Engineering Department and Applied Data Science Department, Research Center Director, San Jose State University

Presentation Abstract

Recent fast advance of artificial intelligence techniques brings many great opportunities and applications in smart cities. Smart agriculture is one of hot topics. In this talk, Dr. Gao first review the current state-of-the-art intelligent technologies and approaches for smart agriculture in three perspectives, including smart crop-farming, smart livestock farming, and smart fruit ranches. Dr. Gao discusses and reports the integrated data-driven machine learning approaches and machine learning models based on 3D big data, including satellite, remote sensing, UAV, and IOT data. The proposed intelligent solutions support smart agriculture in smart crop farming supporting crop identification, soil analysis, crop monitor, disease detection and progress prediction, and product estimation as well as crop trading. In addition, a smart agriculture cloud is presented to implement the presented intelligent solutions for smart crop farms and precising farming.

Short Bio

Jerry Zeyu Gao is a professor at the Department of Computer Engineering at San Jose State University. Now, he is the director of SJSU research center on Smart Technology, Computing, and Complex Systems. He had over 20 years of academic research and teaching experience and over 10 years of industry working and management experience on software engineering and IT development applications. He has published three technical books and over hundreds (320) publications in IEEE/ACM journals, magazines, international conferences and workshops. His Google Scholar citation is over 8.9K and his ResearchGate reads is over 330K. His current research areas include smart cities, intelligent system test automation, AI and machine learning, cloud computing and mobile clouds, smart cities, and cyber physical systems. In 2010, Jerry Gao has been recognized by University of Texas at Arlington as a distinguished Alumna for College of Engineering at its 50th anniversary. In 2011, he was award as a KSI Fellow in SEKE2011. In 2013, Dr. Gao has received the College of Engineering Faculty Award for Excellence in scholarship, Dr. Gao served as an editorial board member and an associate editor for several international journals in software engineering and electronic commerce, such as IEEE Software, MDPI Software Journal, Journal of AI and Technology, Service Oriented Computing and Applications, Journal of Smart Cities and Society, and Scientific Publisher's Journal of IJSEKE. Recently, Dr. Gao has been included and listed in Marquis Who's Who 2020-2021.

In last 10 years, Dr. Gao has played as one of leaders in organizing many international conferences and workshops as a conference co-chair, program co-chair, and workshop co-chair. Now, he is the steering board chair for IEEE CISOSE congress and the steering board member for IEEE Smart World Congress, The IEEE CISOSE congress include six IEEE conferences: IEEE BigDataService, IEEEAITest, IEEE AI Mobile Cloud, IEEE SOSE, and IEEE DAPPS. In addition, he served as a chair for many other conferen.



AI: The Unsung Hero of Energy Efficiency

Jane Wu

Chair, Industry Alliances

Presentation Abstract

The global energy landscape urgently needs a clean and sustainable transformation. However, integrating renewable sources and optimizing energy use comes with significant challenges. Artificial intelligence (AI) is emerging as a game-changer, accelerating this transition. By analyzing vast datasets and identifying complex patterns, AI applications are transforming how we generate, manage, and consume energy.

We have been exploring the key technical mechanisms of AI in clean energy. AI is optimizing smart grids, ensuring grid stability, and reducing reliance on fossil fuels by balancing supply and demand from variable renewable sources. AI algorithms are also predicting renewable energy generation with greater accuracy, allowing for smoother integration into the grid. Predictive maintenance powered by AI analyzes sensor data to identify potential equipment failures in wind turbines, solar panels, and power lines. This proactive approach minimizes downtime and maximizes energy production. Additionally, AI is empowering consumers to adjust energy use based on real-time pricing and grid conditions, promoting efficiency and cost savings. These advancements, along with optimized energy storage systems using AI, contribute to a more reliable and sustainable energy future.

Short Bio

Her accomplishments prior to BRI Capital are notable. As a corporate executive, she successfully led the IPOs of three companies across the U.S., Hong Kong, and China stock markets. Her entrepreneurial spirit shone brightly as she founded IPP Global, a firm dedicated to renewable and Waste-to-Energy projects. In her tenure as President of Global Operations at Comtec Solar, Jane played a pivotal role in navigating the company through a successful IPO on the Hong Kong stock exchange during a tumultuous economic climate in 2009, thanks to her adeptness in market strategies, branding, and business model innovation.

Her tenure at TD Growth Capital further highlights her prowess in guiding cleantech sector companies through strategic planning and identifying optimal exit strategies. Her strategic acumen was also evident in her President role at JA Solar, where she forged vital global alliances and spearheaded the company's marketing and supplier chain strategies. Her industry experience is further enriched by her 11-year tenure at Applied Materials, where she held various technical and managerial positions, and her initial foray into device process engineering at Rockwell Semiconductor.

Jane's entrepreneurial journey includes co-founding CiWest Corporation, which successfully merged with a major semiconductor foundry. Her academic foundation is as impressive as her professional journey, with a degree in Physics from the prestigious California Institute of Technology (Caltech). Her extensive experience and dynamic leadership have consistently generated innovative strategies and growth, marking her as a transformative leader in her field.



LLM for domain-specific tasks

Fei Wu

Presentation Abstract

In recent years, some large language models (e.g., OpenAI's ChatGPT, and Google's PaLM) have been shown to exhibit more general intelligence than previous AI models across a variety of domains and tasks. These LLMs can generate novel and unexpected responses—a significant departure from earlier routine models that were limited to generating predictable and formulaic responses. In this talk, I will introduce how to train domain-specific LLM for certain tasks such education and legal domains. The main topics consist of domain-specific SFT and the integration of data-driven and knowledge-guided techniques.

Short Bio

Fei Wu received his B.Sc., M.Sc. and Ph.D. degrees in computer science from Lanzhou University, University of Macau and Zhejiang University in 1996, 1999 and 2002 respectively. From October, 2009 to August 2010, Fei Wu was a visiting scholar at Prof. Bin Yu's group, University of California, Berkeley. Currently, He is a Qiushi distinguished professor of Zhejiang University at the college of computer science. He is the deputy dean of Shanghai Institute for Advanced Study of Zhejiang University, and the director of Institute of Artificial Intelligence of Zhejiang University. He is the chairman of IEEE CAS Hangzhou-Chapter since Oct, 2018.

He is group leader of artificial intelligence innovation action plan of the Ministry of Education, the Section Executive Editors-in-Chief of Engineering, editorial members of Frontiers of Information Technology & Electronic Engineering. He has won various honors such as the Award of National Science Fund for Distinguished Young Scholars of China (2016). His research interests mainly include Artificial Intelligence, Multimedia Analysis and Retrieval and Machine Learning.



Efficient Serverless Computing with Novel OS Primitives: Characterization, Optimization and Reflection

Haibo Chen

Distinguished Professor of Shanghai Jiao Tong University

Presentation Abstract

Serverless computing promises cost-efficiency and elasticity for high-productive software development. To achieve this, the serverless computing platform must address two challenges: strong isolation between function instances, and extremely low startup latency. In this talk, I will first present a characterization of state-of-the-art serverless platform and derive several key metrics, which collectively forms a systematic methodology and a benchmark called severlessbench (v1 and v2). Then, I will show how serverless platform can be made efficient with novel OS primitives for both normal and confidential serverless computing on CPU-only and CPU-XPU platforms. Finally, I will give a reflection on the gap between serverless research and real-world systems and present an outlook on future serverless computing.

Short Bio

Haibo Chen is a Distinguished Professor of Shanghai Jiao Tong University, where he directs the Institute for Parallel and Distributed Systems (IPADS). His main research areas are operating systems and distributed systems. He received Best Paper Awards from SOSP, ASPLOS, EuroSys and VEE, Test of Time Award from DSN, Best Paper Honorable Mention and Research Highlight Award from SIGMOD, Honorable Mention of The Dennis M. Ritchie Thesis Award (Advisor) from SIGOPS. He currently chairs ACM SIGOPS, serves on the editorial board member and co-chair of Special Sections of Communications of the ACM, Program Committee of SOSP 2023/OSDI 2024, PC co-chair of EuroSys 2025, and the inaugural technical steering committee chair of OpenHarmony, an open-source operating system deployed on hundreds of millions of devices. He is an ACM Fellow and IEEE Fellow.





Ethical AI with Ecology Perspective

Jinfeng Zhou

Secretary-General of China Biodiversity Conservation and Green Development Foundation (CBCGDF)
Fellow of the World Academy of Art and Science

Presentation Abstract

The integration of Artificial Intelligence (AI) into ecological conservation presents a transformative opportunity to address the escalating challenges facing global ecosystems. AI's capabilities in real-time monitoring (e.g. the Anti-electrofishing Network and "RiverEye" APP, the Lifeline of Migratory Birds), species identification (e.g. underwater biodiversity monitoring by Australian scientists), and predictive modeling (e.g. GBIF and Citizen Science) offer unprecedented tools for safeguarding biodiversity and managing natural resources. However, the ethical and practical implications of AI's role in conservation necessitate a nuanced understanding of its potential and limitations.

The speech explores the multifaceted impact of AI on ecological preservation, emphasizing the critical role of human values in shaping AI's trajectory, including UNESCO Recommendation on the Ethics of Artificial Intelligence. While AI can enhance conservation efforts, it is not inherently benevolent towards nature or life; this disposition must be instilled by conscious human guidance. By listing specific applications of AI in conservation, such as real-time forest fire detection and wildlife population analysis, the efficiency gains in energy management and emissions reduction through AI-driven solutions can be highlighted. Yet, it also confronts the paradox of AI's energy consumption, which, despite optimizing energy use elsewhere, demands substantial resources for its own operation. This raises questions about the sustainability of AI-driven conservation. Furthermore, the evolving relationship between ecology and AI should be examined, questioning whether self-replicating, self-repairing AI systems should be considered as life forms and subject to ecological laws. It posits that ecological principles should guide the development of AI, ensuring that technological advancement aligns with sustainable practices.

The ethical dimension of AI in conservation is brought to the fore when considering scenarios where AI-controlled machines or organisms created by AI-enhanced synthetic biology techniques could replace the ecological functions of certain species. The audience are to be challenged to contemplate whether and how we should protect such species in the face of technological substitution. It underscores the need for ongoing ethical reflection and strategic adaptation as AI technology advances. In conclusion, a balanced approach to AI in ecological conservation should be advocated, which leverages its capabilities while remaining vigilant to its potential pitfalls. It calls for a concerted effort to infuse AI with a reverence for nature and respect for life, ensuring that it serves as a tool for ecological stewardship rather than a substitute for human responsibility in the preservation of our planet's biodiversity.

Short Bio

Dr. Jinfeng Zhou is the Secretary-General of China Biodiversity Conservation and Green Development Foundation (CBCGDF), who holds PhDs and Post Doctorates from Peking University and Purdue University. Zhou has held numerous significant positions, including Member of the Chinese People's Political Consultative Conference (CPPCC) (9-11 sessions) Standing Committee Member of the All-China Federation of Industry and Commerce and Deputy President of China Non-Governmental Science Technology Entrepreneurs Association (CASTE-NG). He is a Fellow of the World Academy of Art and Science, an Executive Committee Member of the Club of Rome, and an expert in multiple global environmental initiatives. Zhou has pioneered several environmental theories and practical conservation strategies, notably "Equal Rights of Carbon" (ERoC), "Biodiversity Conservation in Our Neighborhood" (BCON), "Four Principles of Environmental Governance", "Three Axioms of Ecological Restoration", "Human-based Solutions" (HbS), and "Community Conservation Areas" (CCAfa). Zhou has also been instrumental in Environmental Public Interest Litigation (EPIL) in China, leading significant cases to protect wildlife and public health. He is a prolific author and advocate for holistic approaches to address biodiversity loss, climate change, and public health crises through books and papers. His efforts have earned him multiple awards and honors such as 2021 Most Influential People of The Year by China Newsweek, reflecting his commitment to environmental protection and sustainability.



ESG and Sustainability

Lei Xing

Director-General of the World Green Design Organization
Chairman of Beijing Dragon Design Foundation

Short Bio

With public welfare and branding as a means, Xing Lei has been committed to promoting innovation and green development. He initiated the establishment of public welfare organizations, such as Beijing Dragon Design Foundation, International Design Federation, World Green Design Organization, Beijing Green Design Promotion Association, and Beijing Service Design Promotion Association. Mr. Xing Founded lots of pilot Projects, like DDF Award (a National Award in China), Green Design International Contribution Award/Green Design International Award, Dragon Design Festival, China Design Hall of Fame, World Green Design Forum, China Service Design Conference, Green Haven, Green Leaf Mark, Global Green Development Think Tank. And Promotes the construction of social-enterprise platforms such as Design Valley and Green Research Institute. He is the editor and author of “China Youth Design Innovation Ceremony”, “Entrepreneurship in China”, “Design Wins the World”, “China Green Design Report” and so on.

He joined the China Democratic Construction Association in 1998 and served as a member of the Qingdao Municipal Committee of the China Democratic National Construction Association, a member of the Qingdao Municipal Committee of the Chinese People’s Political Consultative Conference, a member of the Beijing Youth Federation, and a member of the Standing Committee of the Beijing Daxing District Committee of the Chinese People’s Political Consultative Conference for two terms. Under warm invitation, He is now a member of the China Committee of the Club of Rome.





Smart Machine in Traditional Chinese Medicine

John Yu

Co-founder/CEO of Beijing Smart Health Technologies Co.
Ph.D. in Electrical Engineering from California Institute of Technology (Caltech);
Former Technical Director/Architect of AT&T (a Fortune 500 company).

Presentation Abstract

Traditional Chinese Medicine (TCM) represents a holistic healthcare paradigm cultivated over millennia in China. It perceives the human body as a multifaceted network of interconnected systems, prioritizing the equilibrium between Yin and Yang, central tenets of Taoist philosophy, which symbolize opposing forces pervasive in existence.

TCM integrates a sophisticated array of diagnostic and therapeutic approaches honed through extensive empirical observation, theoretical elucidation, and clinical application. Through comprehensive assessment encompassing symptoms, medical history, tongue examination, pulse analysis, and other clinical indicators, TCM practitioners discern patterns of disharmony, known as Pattern Differentiation, categorized according to Eight Principles: Yin/Yang, Exterior/Interior, Cold/Heat, and Deficiency/Excess. By discerning the interplay of these principles, practitioners delineate the patient's unique Pattern Differentiation, elucidating the nature and location of imbalances within the body. Subsequently, they apply diverse therapeutic modalities, including herbal medicine, acupuncture, massage, and dietary interventions, to reinstate equilibrium and harmony. Moreover, TCM encompasses diverse schools of diagnostic and therapeutic methodologies, delineating practitioners' orientations based on their education and training. Tailoring treatments to individual needs, TCM adopts a holistic perspective, addressing not only physical manifestations but also emotional, mental, and environmental factors. This comprehensive approach endeavors to target the root causes of illness and foster overall well-being, solidifying TCM as an enduring healthcare system.

In this presentation, we introduce the TCM Smart Machine, an AI-driven system designed to simulate TCM diagnostic and therapeutic methodologies. Comprising a foundational core brain, specialized application models, and an architecture facilitating brain-agent interactions, this system forms a complex adaptive system (CAS) primed for large-scale TCM practice. Leveraging three-level integrated machine learning—encompassing feature learning, enhancement learning, and adaptive system learning—the TCM Smart Machine can assimilate various TCM inheritance schools and refine its performance in real-world service settings. This innovation facilitates TCM practice, preserves its heritage, modernizes its methodologies through the integration of AI and complex system science, and shed the light toward the advancement of future systems medicine.

Short Bio

Dr. John Yu is the co-founder and CEO of Meridian Smart Health Technologies Co. in Beijing, overseeing the development of the AI Brain of Traditional Chinese Medicine (TCM) for diverse healthcare applications. He obtained his PhD in Electrical Engineering from California Institute of Technology (Caltech). He was a system architect and engineering director of AT&T for intelligent network system design, optimization and engineering. His R&D interests are in complex system and network, AI brain and ubiquitous AI agents for healthcare. He led his team developed the first TCM Virtue Doctor System (TCM AI Brain and Agents) in the industry. He is an expert of the Institute for AI International Governance of Tsinghua University, and the Chief Expert of the Working Committee of Comprehensive Reform of TCM in China.



Digital Financing and Sustainable development

Wu Wen

Professor of Computer Science and Technology
Professor of International Business School of Zhejiang University

Presentation Abstract

Climate change is becoming an ever-urgent challenge to mankind despite the past thirty years efforts by United Nations, scientists, and government. The division in geopolitics between east and west, and in economy between the north and the south is not helping with the current approach. Carbon monetary laboratory is a project originated by a group of people working in public money, green finance, and climate science with the goal of focusing the various efforts mentioned above under a public monetary approach using carbon credits as a sovereign asset. This requires global collaboration leveraging the governance infrastructure provided and proven by the past decade's experience in blockchain based digital financial system.

Short Bio

Dr. Wu Wen is currently a professor at the International Business School of Zhejiang University and the Secretary-General of the International Organization for Central Bank Digital Currency (CBDC). He graduated from the University of Oxford in the United Kingdom with a Ph.D. in Computer Science. Dr. Wu's primary research areas include fintech, digital currency, blockchain, and cybersecurity.

Research and Teaching Experience: After obtaining his Ph.D. from the University of Oxford, Dr. Wu conducted postdoctoral research at NTT Communication Science Laboratories in Japan and NASA's Software Institute in the United States. He later became the youngest associate professor to join Tokyo Institute of Technology. During his visit to Stanford University, he participated in the U.S. Department of Defense's Common Access Card (CAC) project, serving as the Chief Security Architect responsible for managing the implementation of the U.S. federal government's Personal Identity Verification (PIV) project. Dr. Wu also co-founded eCurrency in Silicon Valley, the first company to provide central bank digital currency solutions. He collaborated with the Digital Currency Research Institute of the People's Bank of China to establish the International Telecommunication Union (ITU) Digital Legal Currency Focus Group, serving as its chairman. He co-authored the book "Legal Digital Currency" with Professor Chen Baoshan, published by the People's Finance Publishing House. Dr. Wu holds multiple patents in digital processing, digital payment, and communication security.



Responsible AI: Building Trust and Ethics in the Age of AI

Fanjing Meng

Chief Technology Officer of IBM China System Development Lab

Presentation Abstract

The rapid advancement and integration of Artificial Intelligence (AI) into various aspects of our lives demand a heightened focus on responsible design, development, deployment, and use. This talk will delve into the core principles of Responsible AI, focusing on explainability, fairness, robustness, transparency, and privacy in AI systems. We will address the challenges and provide practical solutions for achieving these goals, including regulatory frameworks, technical methodologies, and organizational policies. Through case studies from diverse industries, we will highlight successful implementations and key lessons learned. Attendees will gain valuable insights into building trust with stakeholders, mitigating risks, and fostering innovation while maintaining high ethical standards in AI.

Short Bio

Dr. Fanjing Meng, Chief Technology Officer of IBM China System Development Lab, has more than 20 years of cutting-edge technology research, development and management experience, including sustainable computing and AI, AIOps, ITOA, cloud computing, software and solution engineering and etc. Currently, she is committed to the research and development of sustainable computing technologies by building a full-stack sustainable computing optimization and management platform based on IBM systems, software and services to accelerate the realization of sustainable computing and sustainable digital transformation of enterprises. She has published more than 30 academic papers in international conferences and journals, has more than 40 international patents and patent applications in many innovative fields, and has received more than 30 awards for technological innovation and contribution from IBM and IEEE. In addition, she is actively involved in the establishment and construction of technical and academic communities, serving as the General Chair(Co-Chair), Technical Program Committee Chair(Co-Chair), Technical Program Committee Member of International Conferences and reviewers of International Journals, as a founding member and project leader of the IEEE WIE (Women-in-Engineering) Beijing Affiliate, and as a member and invited speaker of IEEE Women in Services Computing (WISC).



AI in transition towards silicon life

Daniel Zhu

Honorary Chairman of FTS 2024 IEEE

Presentation Abstract

The philosophical thinking of AI in the transition from carbon-based to silicon-based life tries to answer that whether AI is dangerous and where we are heading to. It touches on fundamental questions of what it means to be alive, the nature of intelligence, and the role of technology in shaping life's future. In essence, AI's involvement in this transition forces us to confront deep philosophical questions about life, intelligence, consciousness, and our position in the history of universe.

Short Bio

Honorary Chairman of FTS 2024 IEEE; Mentor of the Global Challenge Laboratory at Imperial College London, UK; Senior Advisor, AIGC, National Science Innovation Think Tank, Chinese Academy of Sciences; Founder and 2015 Who's Who of the Year of x'lab at Tsinghua University; China Committee of the World Wildlife Fund (www.wwf.org) – Ecological Environment; Former Project Director, China, The conference Board; Former General Manager of Waste Management inc EPC in China, a Fortune Global 500 company; Former investment partner of China Environment Fund initiated by Tsinghua University; Former partner of Enersize China, a Swedish industrial IoT listed company; Former economics faculty at Zhejiang university .



AI Investment for Future Technology

This session will explore the dynamic landscape of AI investments, highlighting emerging trends, key opportunities, and the challenges faced by investors in this rapidly evolving field. Our distinguished speakers will share insights on strategic funding, innovative startups, and the impact of AI advancements on various industries, offering valuable perspectives for investors looking to navigate and capitalize on the AI revolution.

Panellist

Jane Wu (Moderator)

Chair, Industry Alliances



Dr. Xiaoli Li is currently a principal scientist at the Institute for Infocomm Research, A*STAR, Singapore. He is also the department head of the Machine Intelligence department, which consists of 100+ AI and data scientists. It is the largest AI and data science group in Singapore. He has also held an adjunct professor position at Nanyang Technological University, Singapore, for 6 years. He is an IEEE Fellow and Fellow of Asia-Pacific Artificial Intelligence Association (AAIA). Xiaoli is also serving as KPMG-I2R joint lab co-director. He has been a member of Information Technology Standards Committee (ITSC) from ESG Singapore and In-focomm Media Development Authority (IMDA) since 2020. Moreover, he serves as a health innovation expert panel member for the Ministry of Health (MOH), expert panel member for Ministry of Education (MOE), as well as an AI advisor for the Smart Nation and Digital Government Office (SNDGO), Prime Minister's Office, highlighting his extensive involvement in key Government and industry initiatives.

Enqiang Wang

Founding Partner, TianDi Fund

Short Bio



Mr. Wang Enqiang, a visionary and trailblazer in the venture capital world. With a remarkable 25-year career in venture capital, Mr. Wang stands at the forefront of innovation and investment excellence. As a distinguished management partner at Shanghai TianDi Fund, he has successfully managed four prominent funds, including Venture TDF China, TDGC I, TDGC II, and Taishan Tianyi. His investment acumen is evidenced by his leadership and participation in managing 178 companies, including renowned names such as Alibaba, Baidu, Focus Media, Huating Power, and Hive Drones. His efforts have led to 11 companies going public and 4 being acquired, showcasing his exceptional ability to drive high-performance outcomes.

Mr. Wang's expertise lies in early-stage investments and the commercialization of technological innovations. His career is marked by his ability to collaborate with cross-cultural teams and his rich experience in both international and local investments. Prior to his venture capital endeavors, Mr. Wang served as the Deputy Director of the Economic Development Office at the Shanghai Municipal Government's Research Office and was a lecturer and deputy director of student affairs at Tongji University.

Panellist

Bing Fu Wang

Director, 2012 Telecom Lab

Short Bio

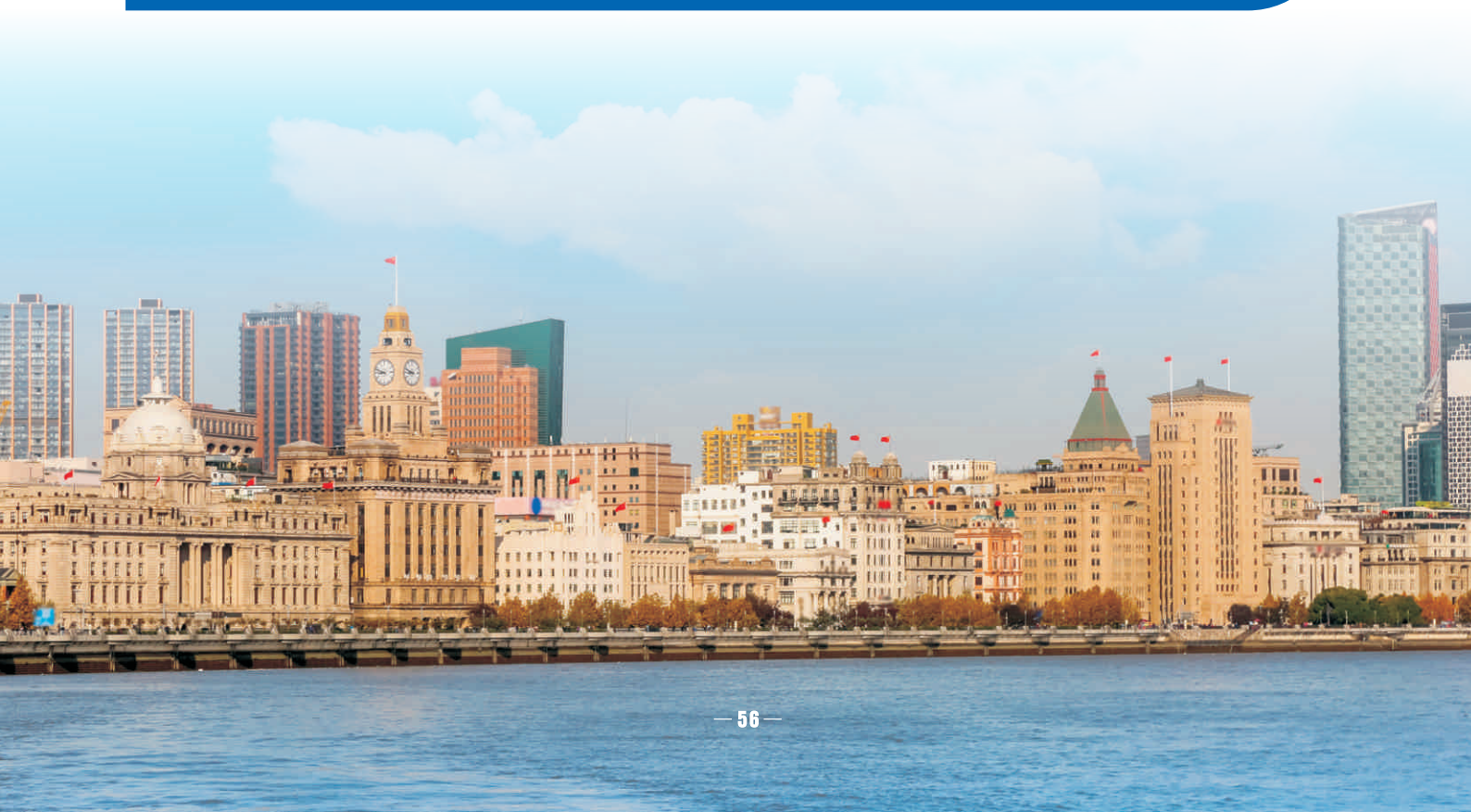
Wang Bingfu is a distinguished leader in the field of telecommunications with a career spanning over three decades. He began his career as a lecturer at Northwestern Polytechnical University from 1989 to 1997, laying a strong foundation in academia. Transitioning to industry, he held various pivotal roles at Huawei Technologies, where he significantly contributed to technological advancements and standardization.



In the 2.0 era of his career (1998-2008), Wang served as a hardware manager and research department manager, and later as the first product manager for ATM/ESR, spearheading the IPD product strategy. He was instrumental in incubating the CPCII/ATCA and E-5000 core router platforms. As the director of Huawei's central hardware department, he led the creation of the company's pre-research department and formulated Huawei's 2008 self-preservation strategy and pre-research standard patent linkage strategy. As general manager of the 707 server product line, he oversaw the development of the industry's first flash-based storage disk, which supported big data searches.

During the 3.0 era (2009-2018), Wang held the position of director of the Communication Technology Laboratory at Huawei, where he played a key role in leading the IEEE 802.11.ax (Wi-Fi 6) standard and spearheading the 3GPP 5G standards initiative.

Wang's extensive experience and contributions to the telecommunications industry make him a highly respected figure, and his insights continue to shape the future of global communication technologies.



Panellist

De Ji Chen

Fellow of the International Society of Automation (ISA) and National High-Level Overseas Talent

Short Bio

Dr. Deji Chen graduated from the Department of Computer Science at the University of Texas at Austin in 1999. He began working at Emerson Process Management in 1995, where he was a core developer of the Distributed Control System and participated in the formulation of international standards such as OPC and WirelessHART (IEC62591).

In 2014, Dr. Chen returned to China and is currently the Technical Director of the Industry 4.0 Laboratory at Tongji University. He is also a Chinese expert in the ISO/IEC Internet of Things (IoT) Standards Committee and the chief editor of the “Real-Time IoT Framework” standard published in 2021. Additionally, he contributed to the Ministry of Industry and Information Technology’s 2017 “White Paper on Cyber-Physical Systems” and “White Paper on Industrial Internet Platforms.”

Dr. Chen has published over 70 papers, authored and translated 7 monographs, and holds 13 U.S. patents. His book “Wireless Control Foundation” received the ISA’s 2015 Raymond D. Molloy Award. He also holds developer certifications for Hadoop and HBase from Cloudera, a globally renowned big data services company.



Jeff Lin

iGlobe Partner

Short Bio

Jeff Lin is a Partner at iGlobe Partners, a Singapore based cross border VC firm focusing on SaaS, AI and deep tech. Prior to becoming a VC, he was with Roland Berger Strategy Consultants, apart from his various technical and commercial roles with Nokia, Hutchison Whampoa and Huawei in the earlier part of his career.

Jeff is an alumnus of University of Science & Technology of China, as well as INSEAD and the Wharton School.





Schedule

2024 IEEE CISOSE & 2024 IEEE FTS

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IEEE CISOSE 2024
Joint -Program Glance

02

IEEE CISOSE 2024 Detailed
Program and Schedules

03

IEEE FTS 2024
Program and Schedule

Date: 7/15/2024

2024 IEEE International Congress on Systems Engineering in Artificial Intelligence and Services Registration (IEEE CISOSE2024)

08:30am-06:00pm		Registration for IEEE International Congress on Systems Engineering in Artificial Intelligence and Services			
08:00am-09:00am	Joint Keynote Session #1	Speaker	Session Chair: Sato Hiroyuki, Tokyo University, Japan		
	Topic	Room	Taghi M. Khoshgoftar (Online)	Imbalanced Big Data and Machine Learning Challenges	
	Room	Microelectronics Academic Lecture Hall			
09:00am-10:00am	Joint Keynote Session #2	Speaker	Session Chair: HaiBo Chen, Jiao Tong University, China		
	Topic	Room	Hai Jin, Professor, IEEE Fellow, Huazhong University of Science and Technology, China	Understanding Computability Net: A Distributed System Perspective	
	Room	Microelectronics Academic Lecture Hall			
Tea Break					
10:00am -10:30am	Meeting room arrangements	Microelectronics academic lecture Hall	E Valley Boot Camp		电子信息与电气工程学院 3号楼-100 (EIEE 3-200)
Concurrent Program	IEEE First AI Standard and Quality Assurance	Working Workshop	IEEE CISOSE Tutorials		IEEE CISOSE Invited Paper Track I
	IEEE AI Standard and QA Session #1	Topic: IEEE First AI Standard and QA Workshop (Overview/Process/Alliance Group/Structure)	Tutorial #1 - Part I		Invited Paper Session #1
10:30am - 12:00pm	Session Chair: Jerry Gao and Jane Wu		Datamorphic Testing: Principles, Tools and Applications to Machine Learning		Intelligent Services and Cloud
			Speaker: Hong Zhu		Session Chair: Sato Hiroyuki
Lunch time					
12:00pm -01:00pm	IEEE AI Standard and QA Session #2	Topic: Computer Vision System Quality Assurance and Standards	Tutorial #1 - Part II		Invited Paper Session #2
01:00am - 02:30pm	Session Chair: Jerry Gao		Datamorphic Testing: Principles, Tools and Applications to Machine Learning		New Trends in Service-Oriented Computing
			Speaker: Hong Zhu		Session Chair: Jie Xu
Tea Break					
02:30pm -3:00pm	IEEE AI Standard and QA Session #3	Topic: Large Machine Learning Model Standards and Quality Assurance	Tutorial #2 - Part I		Invited Paper Session #3
03:00pm-04:30pm	Session Chair: Jie Xu		Topic: Testing and Automation for Intelligent Computer Vision and Applications		Machine Learning Applications
			Session Chair: Jerry Gao		Session Chair: Paul Twonends
Tea Break					
04:00pm -04:30pm	IEEE AI Standard and QA Session #4	Topic: Sustainable Intelligence Standard and Quality Assurance	Tutorial #2 - Part II		Invited Paper Session #7
04:30pm -06:00pm	Session Chair: Fan Jing Meng		Topic: Testing and Automation for Intelligent Computer Vision and Applications		Testing and Exploring LLMs 2
			Session Chair: Jerry Gao		Session Chair: Paul Twonends
Large group Photo Shoot Part 1 (Lobby)					
06:00pm-06:30pm	Conference reception (Free admission with one reception ticket)				
06:30pm-08:00pm	CISOSE Planning Meeting				
08:00pm-09:30pm					

01

Day 2
17-Jul-24
Time
08:00am - 06:00pm

2024 IEEE International Congress on Systems Engineering in Artificial Intelligence and Services Registration (IEEE CISOSE2024)
IEEE CISOSE 2024 -IEEE Big Data Services 2024/IEEE DAPPS2024/IEEE ICC2024/IEEE Mobile Cloud2024 /IEEE SOSE2024/IEEE AITest2024/IEEE FITR2024
Registration

09:00am-09:30am	IEEE CISOSE 2024 Opening Session at 茶上院100 (East Upper Court 100)		Session Chair: Wen Wu, Zhejiang University
	IEEE CISOSE 2024 Organization Team Representatives IEEE Conference Organizers from 8 IEEE Conferences Welcome From Local Hosts and Co-Sponsors Shanghai Institute for Advanced Study of Zhejiang University (SIAS) Jiao Tong University Representative		
09:30am-10:30am	Joint keynote Session 3 at 茶上院100 (East Upper Court 100) Topic: Powering Real-World Transformation with Big Data and Machine Learning Speaker: Xiaoli Li, Professor, IEEE Fellow, Institute for Inform Research, A*STAR		Session Chair: Jerry Gao
Tea Break time			
10:30am-10:45am	IEEE BDS	IEEE DAPPS	IEEE ICC
Conference Room Arrangements	(East Upper House 201)	(East Upper House 212)	(East Upper House 205)
10:45am-12:15pm	IEEE BDS 1 Improving AI Applications Chair: William B. Adreopoulos	IEEE DAPPS 1 Blockchain Transactions and Ecosystems Chair: Kaiwen Zhang?	JCC 1 Core Infrastructure I Chair: Haihuo Chen
12:15pm-01:15pm	Lunch		
01:30pm-02:20pm	Session Chair: Ji Xu	Online Joint Keynote Session #4 at 茶上院100 (East Upper Court 100) Topic: Artificial Intelligence for Biometric Technologies and Systems Speaker: Vincenzo Purci, Professor, IEEE Fellow, University of Milan Italy	
02:30pm-04:00pm	IEEE BDS 2 (East Upper House 201) Machine Learning in Trading, Manufacturing, and Learning Chair: Fujioka Hirovuki/Fei Wu	IEEE DAPPS 2 (East Upper House 212) Blockchain Performance and Optimization Chair: Xiaojie Zhu?	IEEE JCC 2 (East Upper House 205) Core Infrastructure II Chair: Paul Townsend?
04:00pm-04:30pm	Team Break		
04:30pm-06:00pm	IEEE BDS 3 (East Upper House 201) Big Data Analytics and Machine Learning Session Chair: Weicen Wu	IEEE DAPPS 3 (East Upper House 212) SECURITY, REDACTION, AND IDENTITY Chair: Hong Zhu	IEEE JCC 3 (East Upper House 205) Scheduling and Optimization Chair: Victor Sanchez-Arquy?
06:00pm-06:30pm	Large Group Photo I		

01

Day 3

08:00-18:00

2024 IEEE International Congress on Systems Engineering in Artificial Intelligence and Services Registration (IEEE CISOSE2024)
 (Wed.) July 17, 2024 - IEEE CISOSE 2024 -IEEE Big Data Services 2024/IEEE DAPPS2024/IEEE JCC2024/IEEE Mobile Cloud2024 /IEEE SOSE2024/IEEE AITest2024/IEEE FTSS2024 Sub -forum
 IEEE CISOSE2024 and IEEE FTSS2024 Registration

09:00am-9:45am	Session Chair: Kaiwen Zhang Moderators: Hong Zhu and Dunhai Ding	Joint Keynote Session #4 at 东上院100 (East Upper Court 100) Topic: Blockchain solutions and Made in Italy Blockchain Solutions and Made in Italy Speaker: Roberto Tonelli, Professor, University of Cagliari, Italy Joint Plenary Session #1 - 东上院100 (East Upper Court 100) Topic: GenAI, Where Are You Going? Prof. Fei Wu, Zhejiang University, China Dr. Kiumi, AI Voice, UK Dr. Emese Bara, VISA, USA Dr. Chaoyi Chen, MeITran.com, China Representatives: ChangGT, Inc.
10:45am-11:00am	Virtual Panels	Tea Break Time
11:00am-12:30pm	Conference Room IEEE BDS (East Upper House, 201) IEEE BDS 4 Medical and Explainable Machine Learning Session Chair:Hiroyuki Fujioka	IEEE DAPPS (East Upper House, 212) IEEE DAPPS 4 Innovative Applications and Machine Learning Session Chair: Zhenyu Chen
12:30pm-01:30pm	Chair: Fanling Meng Topic Speaker IEEE BDS 5 (East Upper House, 201) Computer Vision and Large Model Applications	IEEE JCC (East Upper House 205) IEEE JCC 4 Artificial Intelligence and Applications I Session Chair: Kiele Xu? Lunch Joint Keynote Session #4 at 东上院100 (East Upper Court 100) Practices of Machine Learning and Optimization with Quantum Computing Yixiang CHEN, IBM Distinguished Engineer, IBM
02:30pm-04:00pm	IEEE BDS 5 (East Upper House, 201) Computer Vision and Large Model Applications	IEEE BDS 6 - Poster Session (East Upper House, 212) Big Data Applications and Experiences Artificial Intelligence and Applications II Mobile Computing for Detection
04:00pm-04:30pm	Session Chair: Junchi Yan	Session Chair: Kiele Xu Tea Break Time
04:30pm - 05:15pm	Session Chair: Xiaotian Xu Topic Speaker	Session Chair: Fan Wu IEEE CISOSE Joint Keynote Session #6 at 东上院100 (East Upper Court 100) Research and Application of Forestry AI Fu Xu, Professor of Beijing Forestry University Dean of School of Information Science and Technology Dean of School of Artificial Intelligence of BJFU
05:15pm - 6:30pm	Moderators: Monovar Bhujan Topic Panellists	IEEE Plenary Session #2 at 东上院100 (East Upper Court 100) Ethical and Social Implications of AI Dr. Longzi Hong Prof. Hong Zhu Prof. Junhua Ding
06:15pm-06:30pm		Large Group Photo II
06:30pm-08:30pm		Conference Award Ceremony and Dinner

01

2024/7/18

IEEE Future Technology Summit Program (IEEE FTS2024)

Registration Time: 8:0am – 5:0pm

Location		Microelectronics academic lecture Hall
09:00am - 09:30am	Opening Session	IEEE Future Technology Summit Opening Session
09:30am -10:30am	FTS Keynote Session #1	AI for Humanity and Society
	Session Chair	Jerry Gao, San Jose State University, USA
11:00am – 12:30pm	FTS Keynote Session #2	Large Language Model Tasks and Training
	Session Chair	Hiroyuki Sato, Tokyo University, Japan
12:30pm – 01:30pm	Lunch Time	
01:30pm – 02:00pm	Large Group Photo Sesion I	

Location		Microelectronics academic lecture Hall
02:00pm – 03:00pm	FTS Keynote Session #3	Tommorow’s Smart Agriculture
	Session Chair	Hiroyuki Sato, Tokyo University, Japan
03:00pm – 03:30pm	Tea Break Time	
03:30pm - 04:00pm	FTS Keynote Session #4	Ai for Tomorrow
	Session Chair	Jane Wu, Managing Director, BRI Capital Partners, USA
04:00pm – 4:30pm	FTS Keynote Session #5	Digital Economy - Today and Tomorrow
	Session Chair	Prof. Wu WEN, Shanghai, China
04:30pm - 04:45pm	Tea Break Time	
04:30pm - 6:00pm	FTS Plenary Session #1	AI Investment for Future Technology
	Moderator	Jane Wu, BRI, USA

Concurrent Sesions at (School of Electronics, Information and Electrical Engineering 3-100)电子信息与电气工程学院 3号楼-100 (EIEE 3-100)

Location		电子信息与电气工程学院 3号楼-100 (EIEE 3-100)
02:00pm – 03:00pm	FTS Keynote Session #6	Environment, ESG, and Sustainability
	Session Chair	Daniel ZHU
03:00pm - 03:30pm	Tea Break Time	
03:30pm- 04:30pm	FTS Plenary Session #2	Smart Machine in Traditional Chinese Medicine
	Moderator	JingJing Xu, Co-Funder of Beijing Smart Healthcare Association, China
04:30pm - 05:00pm	FTS Keynote Session#7	Responsible AI: Building Trust and Ethics in the Age of AI
	Session Chair	Xiaotain Xu, IBM, China
06:00pm - 06:30pm	Large Group Photo Session II	
06:30pm - 8:30pm	Certificate and VIP Dinner	

Date: 7/15/2024

2024 IEEE International Congress on Systems Engineering in Artificial Intelligence and Services Registration (IEEE CISOSE2024)

Day 1 - 7/15/2024 - IEEE CISOSE2024 - Invited Paper Track

08:30am-06:00pm	Registration for IEEE International Congress on Systems Engineering in Artificial Intelligence and Services (IEEE CISOSE2024)		
08:00am - 09:00am	Building Room	Microelectronics Academic Lecture Hall	Joint Keynote Session 1 - Session Chair: Hiroyuki Sato, Tokyo University, Japan Topic: Imbalanced Big Data and Machine Learning Challenges Speaker: Taghi M. Khoshgoftaar (online)
09:00am - 10:00am	Building Room	Microelectronics Academic Lecture Hall	Joint Keynote Session 2 - Session Chair: Haibo Chen, Jiao Tong University, China Understanding Computability Net: A Distributed System Perspective Speaker: Hai Jin, Professor, IEEE Fellow, Huazhong University of Science and Technology, China
10:00am - 10:30am	Tea Break		

2024 the First IEEE International Working Workshop on AI Standards and Quality Assurance (IEEE AI Standard Workshop2024)

Location: Microelectronics Academic Lecture Hall

Time	Building/Room	Session	Session Information
10:30am - 12:00pm	Microelectronics Academic Lecture Hall	Session 1	2024 IEEE AI Standard Workshop Opening
10:30am - 12:00pm		Session Chair	Jie Xu, Professor, The University of Leeds, UK, IEEE CISOSE AI Standard TaskForce Steering Board Member
10:30am - 11:00am		Topic	The First IEEE AI Standard Workshop Opening Remarks and IEEE AI Standard Initiative and Alliance Group Overview
10:30am - 11:00am		Speaker	Jerry Gao, IEEE CISOSE2024 Steering Board Chair and IEEE AI Standard Workforce Group Chair
11:00am - 11:30am		Topic	IEEE AI Standard Alliance Group Business Perspectives
11:30am - 12:00pm		Task Force Group	Jane Wu, BRI, Inc. USA, IEEE AI Standard Taskforce Steering Board Member Large Group Discussion
12:00pm - 01:00pm	Lunch		
01:00pm - 2:30pm	Microelectronics Academic Lecture Hall	Session 2	Computer Vision AI Standard, Validation and Quality Assurance
01:00pm - 01:45pm		Session Chair	Jane Wu, BRI, Inc. USA, IEEE CISOSE AI Standard Taskforce Steering Board Member
01:45pm - 02:30pm		Topic	Jerry Gao, Professor, San Jose State University, USA, IEEE AI Standard Workshop Chair, and IEEE CISOSE AI Standard Taskforce Chair
01:45pm - 02:30pm		Speaker	Computer Vision Oriented AI Quality Validation and Assurance Standards Large Group Discussion
02:30pm - 02:45pm	Tea Break		
02:45pm - 4:15pm	Microelectronics Academic Lecture Hall	Session 3	Computer Vision Models and System Validation and Quality Assurance Standards
02:45pm - 03:30pm		Session Chair	Jerry Gao, Professor, The University of Leeds, UK, IEEE CISOSE AI Standard TaskForce Steering Board Chair
02:45pm - 03:30pm		Topic	Large LLM Model Quality Evaluation and AI Standard
03:30pm - 04:15pm		Task Force Group	Jie Xu, Professor, The University of Leeds, UK, IEEE CISOSE AI Standard TaskForce Steering Board Member Large Group Discussion
04:15pm - 04:30pm	Tea Break		
04:30 - 06:00pm	Microelectronics Academic Lecture Hall	Plenary Session	Sustainable AI: Pursuing Computational Efficiency and Environmental Harmony
04:30pm - 05:15pm		Moderator	Fanjing Meng, IBM, China
04:30pm - 05:15pm		Panlists	Shuguang Qi, Professor in Engineering and Vice Chief Engineering in CAICT Chao Li Professor and Director of Sustainable Architecture and Infrastructure Lab, Shanghai Jiao Tong University (SJTU), China
05:15pm - 06:00pm		Task Force Group	Large Group Discussion
06:00pm-06:30pm	Large group Photo Session (Lobby)		
06:30pm-08:00pm	Conference reception (Free admission with one reception ticket)		
08:00pm-09:30pm	CISOSE Planning Meeting		

IEEE CISOSE2024 - AI Test and Automation Tutorial Sessions

Day 1 - 7/15/2024

Location: E Valley Boot Camp

Time	Location	Session	Session Information
10:30pm - 12:00pm	E Valley Boot Camp	Tutorial I - Session 1	IEEE CISOSE Tutorial I - Part I
10:30pm - 12:00pm		Topic	Datamorphic Testing: Principles, Tools and Applications to Machine Learning - Part I
10:30pm - 12:00pm		Speaker	Hong Zhu, Professor, School of Engineering, Computing and Mathematics, Oxford Brookes University, UK
12:00pm - 01:00pm	Lunch		
01:00pm - 2:30pm	E Valley Boot Camp	Tutorial I - Session 2	IEEE CISOSE Tutorial I - Part II
01:00pm - 2:30pm		Topic	Datamorphic Testing: Principles, Tools and Applications to Machine Learning - Part II
01:00pm - 2:30pm		Speaker	Hong Zhu, Professor, School of Engineering, Computing and Mathematics, Oxford Brookes University, UK
02:30pm - 03:00pm	Tea Break		
03:00pm - 03:30pm	E Valley Boot Camp	Tutorial II - Session 1	IEEE CISOSE Tutorial II - Part I
03:00pm - 03:30pm		Topic	Testing and Automation for Intelligent Computer Vision and Applications - Part I
03:00pm - 03:30pm		Speaker	Jerry Gai, Professor, San Jose State University, USA, UK, ALPS-TouchTone CEO and CFO, USA
03:30pm - 04:00pm	Tea Break		
04:00pm - 06:00pm	E Valley Boot Camp	Tutorial II - Session 2	IEEE CISOSE Tutorial II - Part II
04:00pm - 06:00pm		Topic	Testing and Automation for Intelligent Computer Vision and Applications - Part II
04:00pm - 06:00pm		Speaker	Jerry Gai, Professor, San Jose State University, USA, UK, ALPS-TouchTone CEO and CFO, USA
06:00pm-06:30pm	Large group Photo Session (Lobby)		
06:30pm-08:00pm	Conference reception (Free admission with one reception ticket)		
08:00pm-09:30pm	CISOSE Planning Meeting		

IEEE CISOSE2024 - Invited Paper Track

Day 1 - 7/15/2024

Concurrent Invited Track Sessions at School of Electronics, Information and Electrical Engineering 3-200 (EIEE 3-200)

Time	Invited Track Session	Session	Session Title
10:30am - 12:00pm	Invited Track Session 1	Session 1	Session Title: Intelligent Services and Cloud (Session Chair: Hiroyuki Sato, Tokyo University, Japan)
Building Room	Paper ID	Paper Type	Paper Title
	INV-1-SOSE	Invited Paper	Cohabitation of Intelligence and Systems: Towards Self-reference in Digital Anatomies
		Authors	Andrea Morichetta, Anna Lackinger, Schahram Dustdar, Technical University of Vienna, Austria
	INV-3-SOSE	Invited Paper	An Efficient Storage Solution for Cloud/Edge Computing Infrastructures
	Authors	Antonios Makris, Ioannis Korontanis, Evangelos Psomakelis, Konstantinos Tserpes, Harokopio Univ., Greece	
12:00pm-01:00pm	Lunch		
01:00pm-02:30pm	Invited Track Session 2	Session 2	New Trend in Service Oriented Computing - Session Chair: Jie Xu, University of Leeds
Building Room EIEE 3-200	Paper ID	Paper Type	Paper Title
	INV-2-SOSE	Invited Paper	MCBA: A Matroid Constraint-Based Approach for Composite Service Recommendation Considering Compatibility and Diversity
		Authors	Ying Sun, Xiao Wang, Hanchuan Xu, Zhongjie Wang, Harbin Institute of Technology, China
	INV-4-SOSE	Invited Paper	Data Assets as Digital Assets in Web3
	Authors	Wei-tek Tsai, Dong Yang, Beihang University, China	
02:30pm-3:00pm	Tea Break		
03:00pm-4:30pm	Invited Track Session 3	Session 3	Machine Learning Applications (Session Chair: Paul Twonends)
Building Room EIEE 3-200	Paper ID	Paper Type	Paper Title
	INV-5-BDSAI	Invited Paper	Predicting the lifespan of lithium-ion batteries using Machine Learning, Parameter Tuning and Model Ensembling
		Authors	Konstantinos Kokkalis, Christos Chronis, Elena Politi, George Dimitrakopoulos, Iraklis Varlamis, Harokopio University of Athens, Greece
	INV-7-BDSAI	Invited Paper	Preserving Cross-Image Relationship Privacy
	Authors	Farissa Tafannum, Na Li, Lin Li, Prairie View A&M University, USA	

Concurrent Invited Track Sessions at School of Electronics, Information and Electrical Engineering 3-100 (EIEE 3-100)			
10:30am - 12:00pm	Invited Track Session 4	Sesion 4	Creative Computing and Anomaly Detection (Session Chair: Paul Twonends)
Building Room EIEE 3-100	Paper ID	Paper Type	Paper Title
	INV-6-BDSAI	Invited Paper	Generating Creativity in Creative Computing: A Systematic Approach to Transiting from Divergent Thinking to Convergent Thinking
			Chong Zeng , Hongjil Yang, Bath Spa University, UK
	INV-8-BDSAI	Invited Paper	A Review of Unsupervised Anomaly Detection Techniques for Health Insurance Fraud
			Joffrey L. Leevy, Zahra Salekshahrezaee, and Taghi M. Khoshgoftaar, Florida Atlantic University, USA
12:00pm-01:00pm	Lunch		
01:00pm - 02:30pm	Invited Track Session 5	Session 5	Testing and Quality Assurance in ML (Session Chair: Jie Xu)
Building Room EIEE 3-100	Paper ID	Paper Type	Paper Title
	INV-9-AITest	Invited Paper	AI Test Modeling and Analysis for Intelligent Chatbot Mobile App - A Case Study on Wysa
		Authors	Jerry Gao, Prerna Garsole, Radhika Agarwal, Shengqiang Liu, San Jose State University, USA
	INV-12-AITest	Invited Paper	A Survey on Data Quality for Machine Learning: Dimensions, Tools, and Future Directions
		Authors	Junhua Ding, Huyen Nguyen, Haihua Chen, University of North Texas, USA
02:30pm -03:00pm	Tea Break		
03:00pm -04:30pm	Invited Track Session 6	Session 6	Testing and Exploring LLMs 1 - Session Chair: Hiroyuki Sato, Tokyo University, Japan
	Paper ID	Paper Type	Paper Title
	INV-10-AITest	Invited Paper	User Centric Evaluation of Code Generation Tools
		Authors	Tanha Miah and Hong Zhu, Oxford Brookes University, UK
	INV-11-AITest	Invited Paper	Exploring Vulnerabilities in LLMs: A Red-Teaming Approach to Evaluate Social Bias
		Authors	Yuva Jeremy Ong, Jay Gala, Sungeun An, Robert Moore, Divyesh Jadav, IBM, USA
04:30pm -05:00pm	Tea Break		
05:00pm - 6:0pm	Invited Track Session 5	Session 7	Testing and Exploring LLMs 2 (Session Chair: Paul Twonends)
Building Room EIEE 3-100	Paper ID	Paper Type	Paper Title
	INV-13-AITest	Invited Paper	Evaluation of Question-Answering Based Text Summarization using LLM
		Authors	Junhua Ding, Huyen Nguyen, Haihua Chen, University of North Texas, USA
06:00pm-06:30pm	Large group Photo Session (Lobby)		
06:30pm-08:00pm	Conference reception (Free admission with one reception ticket)		
08:00pm-09:30pm	CISOSE Planning Meeting		

The 10th IEEE International Conference on Big Data Computing Service and Machine Learning Applications
 Day 2 - 7/16/2024
 Location Keynote Sessions at 东上院100 (East Upper Court 100)
 Conference Program Sessions at East Upper House 201 and 212

Time: 8:0am - 6:0pm	Registration		
Date: 7/16/2024	Joint IEEE CISOSE2024 Opening Session		
09:00am-09:30am	Joint Keynote Session 3 - Session Chair: Jerry Gao, San Jose State University, USA		
09:30am-10:30am	Location	Session	Powering Real-World Transformation with Big Data and Machine Learning
	东上院100 (East Upper Court 100)	Topic Speaker	
			Xiaoli Li, Professor, IEEE Fellow, Institute for Infocomm Research, A*STAR
10:30am - 10:45am	Tea Break		
10:45am-12:15pm	Session 1	Improving AI Applications - Session Chair: Willam B. Andreopoulos/Iralis Varilamis	
Building Room East Upper House 201	Paper ID	Full Papers (F)	Paper Title
	83	Full Paper	Retrieval Augmented Generation (RAG) based Restaurant Chatbot with AI Testability
		Authors	Vani Bhat, Sree Divya Cheerla, Jinu Rose Mathew, Nupur Pathak, Gunnan Liu, and Jerry Zeyu Gao
	3275	Full Paper	From Perception to Action: Leveraging LLMs and Scene Graphs for Intuitive Robotic Task Execution
		Authors	Christos Chronis, Iraklis Varlamis, Dimitrios Michail, Konstantinos Tserpes and Georgios Dimitrakopoulos
	4146	Full Paper	Resume Content Generation Using Llama 2 with Adapters
	4146	Authors	Navaneeth Sai Nidadavolu and William B. Andreopoulos
12:15pm-01:15pm	Lunch		
01:30pm-02:20pm	Location	Session	Joint Online Keynote Session 4 Session Chair: Jie Xu, University of Leeds, UK
东上院100 (East Upper Court 100)	Topic	Speaker	Artificial Intelligence for Biometric Technologies and Systems
			Vincenzo Piuri, Professor, IEEE Fellow, University of Milan Italy
02:30pm-04:00pm	Session 2	Machine Learning in Trading, Manufacturing, and Learning - Session Chair: Fujioka Hiroyuki	
Building Room East Upper House 201	Paper ID	Paper Type	Paper Title
	359	Full Paper	Learning to Play the Trading Game: Exploring Reinforcement Learning-Based Stock Trading Bots
		Authors	Neeraj Kulkarni, Katerina Potika and Petros Potikas
	6196	Full Paper	Fault Detection in Transmission Production Lines Based on Imbalanced Multivariate Time Series
		Authors	Emeka Ndupuechi and Christian Beecks
	5751	Full Paper	Adaptive Sparse Online Learning through Asymmetric Truncated Gradient
		Authors	Zhong Chen
04:00pm-4:30pm	Tea Break		
04:30pm-06:00pm	Session 3	Title: Big Data Analytics and Machine Learning - Session Chair: Wencen Wu, San Jose State University	
Building Room East Upper House 201	Paper ID	Paper Type	Paper Title
	4474	Full Paper	UAV-Based Powerline Problem Inspection and Classification using Machine Learning Approaches
		Authors	Jerry Gao, Mahavir Chandaliya, Teja Sree Goli and Swapna Kotha
	5419	Full Paper	Biomedical Relation Extraction using LLMs and Knowledge Graphs
	Authors	P. Chellagurki, S. Prasanna Kumar Kumar, R. Raghava Peela, N. Yeluri, C. Rojas, and Jorjeta Jetcheva	
	9596	Full Paper	Vehicular Traffic Flow Prediction via Decentralized Federated Meta-Learning
		Authors	Andrew Selvia, Ankur Singh and Wencen Wu
06:0pm-06:30pm	Large Group Photo Session I		

Day 3
 Date: 7/17/2024
 Location Keynote Sessions at 东上院100 (East Upper Court 100)
 Conference Program Sessions at East Upper House 201 and 212

Time: 8:0am - 6:0pm	Registration		
Time	Location	Session Information	
09:00am-09:45am	东上院100 (East Upper Court 100)	Session	Joint Keynote Session 5 - Session Chair: Kaiwen Zhang
		Topic	Topic: Blockchain solutions and Made in Italy Blockchain Solutions and Made in Italy
09:45am - 10:45am	东上院100 (East Upper Court 100)	Speaker	Speaker: Roberto Tonelli, Professor, University of Cagliari, Italy
		Session	Joint Plenary Session 1 at 东上院100 (East Upper Court 100) - Moderators: Hong Zhu and Dunhai Ding
		Topic	GenAI, Where Are You Going?
	Panelists	Prof. Fei Wu, AI Research Institute, Zhejiang University, China	
		Dr. Kumi, AI Voice, UK	
		Dt. Emese Bari, VISA, USA	
		Dr. Chaoyi Chen, MeiTuan.com, China	
10:45am-11:0am	Tea Break		
11:15am-12:30pm	Session 3	Medical and Explainable Machine Learning - Session Chair: Hiroyuki Fujioka	
Building Room East Upper House 201	Paper ID	Paper Type	Paper Title
	1698	Short Paper	Selecting Attractive Images from 3D Captures of Buddhist Statues Using Grad-CAM++
		Authors	Hirofumi Shimoe and Hiroyuki Fujioka
	1750	Short Paper	Deep Learning Based Skin Lesion Segmentation and Classification
		Authors	Mayank Choudhary and Naveen Chauhan
	3379	Short Paper	Predicting Asthma Attacks Through AI-Powered Thermal Imaging Analysis of Breathing Patterns
	Authors	Amir Hamza, Yassine Himeur and Abbes Amira	
4449	Short Paper	Comparing techniques for TEmporal eXplainable Artificial Intelligence	
	Authors	Edoardo Canti, Enrico Collini, Luciano Alessandro Ipsaro Palesi and Paolo Nesi	

12:30pm-01:30pm				Lunch			
01:30pm-02:15pm	Location	Session	Joint Keynote Session 6 - Session Chair: Fanjing Meng, IBM, China				
	东上院100	Topic	Practices of Machine Learning and Optimization with Quantum Computing				
	(East Upper Court 100)	Speaker	YuXiang CHEN, IBM Distinguished Engineer, IBM				
02:15pm - 02:30pm				Tea Break			
02:30pm - 04:00pm	Session 4	Title: Computer Vision and Large Model Applications					
	Paper ID	Paper Type	Paper Title				
	6103	Short Paper	Research on Named Entity Recognition Method Based on BERT Model				
	Building Room East Upper House 201	6039	Short Paper	An Accurate Classification Method of Competitive Math Problems			
		4505	Short Paper	Very Low-Resolution Face Recognition Based On Multilinear Side-Information based Discriminant Analysis			
	9836	Short Paper	e Comparative Analysis of Feature Descriptors and Classifiers for Real-Time Object Detection				
		Authors	Sarvadnya Bhatlawande, Vikas Nandeshwar and Safalya Satpute				
04:00pm-04:30pm				Team Break			
04:30pm-05:30pm	Session 5	Session Topic: Other Applications of AI - Session Chair: Yassine Himeur					
	Paper ID	Paper Type	Paper Title				
	5290	Short Paper	Stock Market Prediction Based on Time Series Data and Multimodal Sentiments				
	Building Room East Upper House 201	8457	Short Paper	Blockchain-Enabled NFTs as Certificates for Smart UAV Delivery Systems			
		Authors	Chengzu Dong, Zhiyu Xu, Qin Wang, Qi An, Shantanu Pal, Frank Jiang, Shiping Chen and Xiao Liu				
04:30pm-05:30pm	Session 6	Session Topic: Big Data Applications and Experiences (Poster Session) - Session Chair: TBD					
	Paper ID	Paper Type	Paper Title				
	1304	Poster Paper	Multilingual Depression Detection Based on Speech Signals and Deep Learning				
	Building Room East Upper House 212	3854	Poster Paper	Rezvani multi-label data stream classification using Heterogeneous ensemble learning			
		5360	Poster Paper	Monitoring through Multi-Scale Spectrum Filtering			
		Authors	Pranav Yadav, Mudit Choubisa, Anuj Shukla and Dr. Radhika R Cardiac Pulse				
		Authors	Enhancing Supply Chain Efficiency through Retrieve-Augmented Generation Approach in Large Language Models				
	Authors	Beilei Zhu Zhu and Chandrasekar Vuppapalapati					
04:30pm - 05:15pm	Location	Session	Joint Keynote Session 7 - Session Chair: Xiaotian Xu				
	东上院100	Topic	Research and Application of Forestry AI				
	(East Upper Court 100)	Speaker	Fu Xu, Professor of Beijing Forestry University				
			Dean of School of Information Science and Technology				
05:15pm - 06:15pm	Location	Session	IEEE Plenary Session 2 (Hybrid Session) - Moderators: Monowar Bhuyan				
	东上院100	Topic	Ethical and Social Implications of AI				
	(East Upper Court 100)	Plenellists	Dr. Longzi Hong				
			Dr. James Ong				
			Prof. Hong Zhu				
		Prof. Junhua Ding					
06:15pm-6:30m				Large Group Photo Session II			
06:30pm - 8:30pm				Conference Award Ceremony and Dinner			

The 6th IEEE International Conference on Artificial Intelligence Testing (IEEE AITEST 2024)
July 15-18, 2024, Shanghai, China

Date: 7/16/2024

Location Keynote Sessions at 东上院100 (East Upper Court 100)
Conference Program Sessions at East Upper House 211

Time: 8:0am - 6:0pm				Registration			
09:00am-09:30am				Joint IEEE CISOSE2024 Opening Session			
09:30am-10:30am	Location	Session	Joint Keynote Session 3 - Session Chair: Jerry Gao, San Jose State University, USA				
	东上院100	Topic	Powering Real-World Transformation with Big Data and Machine Learning				
	(East Upper Court 100)	Speaker	Xiaoli Li, Professor, IEEE Fellow, Institute for Infocomm Research, A*STAR				
10:30am - 10:45am				Tea Break			
10:45am-12:15pm	Session 1	Testing of AI applications - Haihua Chen					
	Paper ID	Paper Type	Paper Title				
	3	Full Paper	Outline of an Independent Systematic Blackbox Test for ML Systems				
	Building Room East Upper House 211	9	Full Paper	On a systematic test of ML-based systems: Experiments on test statistics			
		29	Full Paper	Computer Vision Intelligence Test Modeling and Generation: Smart OCR Mobile App Testing Experience for Image-based Receipts			
		Authors	Jing Shu, Bingjun Miu, Jerry Gao and Eugene Chang				
12:15pm-01:15pm				Lunch Time			
01:30pm-02:20pm	东上院100	Session	Joint Online Keynote Session 4: Session Chair: Jie Xu				
	(East Upper Court 100)	Topic	Artificial Intelligence for Biometric Technologies and Systems				
		Speaker	Vincenzo Piuri, Professor, IEEE Fellow, University of Milan Italy				
02:30pm - 04:00pm	Session 2	Security verification of AI Models - Session Chair: Monowar Bhuyan					
	Paper ID	Paper Type	Paper Title				
	4	Full Paper	MEH-FEST-NA: An Ensemble Defense System Against Adversarial Attacks in Speaker Verification Systems				
	Building Room East Upper House 211	8	Full Paper	Quantifying the Vulnerability of Anomaly Detection Implementations to Nondeterminism-based Attacks			
		18	Full Paper	FaultLines - Evaluating the Efficacy of Open-Source Large Language Models for Fault Detection in Cyber-Physical Systems			
	Authors	Herbert Mühlburger and Franz Wotawa					
04:00pm-4:30pm				Tea Break			
04:30pm - 06:00pm	Session 3	Use of ML techniques for software testing - I - Session Chair: Hong Zhu, UK					
	Paper ID	Paper Type	Paper Title				
	10	Full Paper	Proxima: A Proxy Model-Based Approach to Influence Analysis				
	Building Room East Upper House 211	13	Full Paper	Cardiac Pulse Monitoring through Multi-Scale Spectrum Filtering			
		17	Full Paper	Utilizing Genetic Algorithms for Generating Critical Scenarios for Testing Autonomous Driving Functions			
	Authors	Florian Klück, Daniel Sumann and Franz Wotawa					
06:0pm-06:30pm				Large Group Photo Session I			

Day 3

Date: 7/17/2024

Time: 8:0am - 6:0pm		Registration	
Time	Location	Session	Session Information
09:00am-09:45am	东上院100 (East Upper Court 100)	Session Topic Speaker	Joint Keynote Session 5 - Session Chair: Kaiwen Zhang Blockchain solutions and Made in Italy Blockchain Solutions and Made in Italy Roberto Tonelli, Professor, University of Cagliari, Italy
09:45am - 10:45am	东上院100 (East Upper Court 100)	Session Topic Panlists	Joint Plenary Session 1 - Moderators: Hong Zhu and Dunhai Ding GenAI, Where Are You Going? Prof. Fei Wu, AI Research Institute, Zhejiang University, China Dr. Kumi, AI Voice, UK Dt. Emese Bari, VISA, USA Dr. Chaoyi Chen, MeiTuan.com, China
10:45am - 11:00am Tea Break			
11:00am - 12:30pm	Session 4	Use of ML techniques for software testing - II - Session Chair: Zhenyu Chen	
Building Room East Upper House 211	30	Full Paper	ScenEval: A Benchmark for Scenario-Based Evaluation of Code Generation Debalina Ghosh Paul, Hong Zhu and Ian Bayley
	28	Short Paper	A Comprehensive Penetration Security Testing Framework for IoT Based Healthcare Devices in Decentralised Environment Priyan Malarvizhi Kumar, Wael Korani, Bharat Rawal and Jeeva Selvaraj
	31	Short Paper	SpecNLP: A Pre-trained Model Enhanced with Spectrum Profile for Bug Localization Mahdi Farzandway and Fatemeh Ghassemi
	33	Short Paper	Youth YANA (You Are Not Alone) Mental Health Consulting Web-Application Harshvardhan Patil, Kirti Digholkar, Sumit Kawale, Onkar Swami and Tanmay Bonde
12:30pm-01:30pm Lunch			
01:30pm-02:20pm	东上院100 (East Upper Court 100)	Session Topic Speaker	Joint Keynote Session 6 - Session Chair: Fanjing Meng Topic: Practices of Machine Learning and Optimization with Quantum Computing YuXiang CHEN, IBM Distinguished Engineer, IBM
02:30pm-04:00pm	Session 5	Workshop Paper	The First IEEE International Workshop on Testing and Evaluation of Large Language Models (TELLMe 2024) Session Chair: Dr. Chaoyi Chen, MeiTuan.com, China
Building Room East Upper House 211	5279	Workshop Paper	Benchmarks and Metrics for Evaluations of Code Generation: A Critical Review Debalina Ghosh Paul, Hong Zhu and Ian Bayley, Oxford Brookes University, UK
	7275	Workshop Paper	Black-box L1 Adversarial Attack Based on Genetic Algorithm Jiyuan Sun, Haibo Yu and Jianjun Zhao, Kyushu University, Japan, Kyushu Sangyo University, Japan
	6761	Workshop Paper	Leveraging Large Language Models for Python Unit Test Jiri Medlen and Emese Bari, LIGS University, USA
03:30am - 04:00am Tea Break			
04:30pm - 05:15pm	东上院100 (East Upper Court 100)	Location Session Topic Speaker	IEEE CISOSE Joint Keynote Session 7 - Session Chair: Xiaotian Xu Research and Application of Forestry AI Fu Xu, Professor of Beijing Forestry University Dean of School of Information Science and Technology Dean of School of Artificial Intelligence of BJFU
05:15pm - 06:15pm	东上院100 (East Upper Court 100)	Location Session Topic Plenellists	IEEE Plenary Session 2 (Hybrid Session) - Moderators: Monowar Bhuyan Ethical and Social Implications of AI Dr. Longzi Hong Dr. James Ong Prof. Hong Zhu Prof. Junhua Ding
06:15pm-6:30pm Large Group Photo Session II			
06:30pm - 8:30pm Conference Award Ceremony and Dinner			

The 6th IEEE International Conference on Decentralized Applications and Infrastructures (IEEE DAPPS 2024)
July 15-18, 2024 | Shanghai, China

Date: 7/16/2024

Location Keynote Sessions at 东上院100 (East Upper Court 100)
Conference Program Sessions at East Upper House 212

Time: 8:0am - 6:0pm		Registration	
Time	Building Room	Location	Session Information
09:00am-09:30am			Joint IEEE CISOSE2024 Opening Session - Session Chair: Wen Wu, Zhejiang University, China
09:30am-10:30am	Building Room	东上院100 (East Upper Court 100)	Joint Keynote Session 3 - Session Chair: Jerry Gao, San Jose State University, USA Topic: Powering Real-World Transformation with Big Data and Machine Learning Speaker: Xiaoli Li, Professor, IEEE Fellow, Institute for Infocomm Research, A*STAR
10:30am - 10:45am Tea Break			
10:45am - 12:15pm	Building Room East Upper House 212	Session 1 Paper ID	Blockchain Transactions and Ecosystems - Session Chair: Kaiwen Zhang, Paper Type Paper Title
		Full Paper	Efficient Cross-Blockchain Token Transfers with Rollback Support Michael Sober, Markus Levonyak, and Stefan Schulte
		Authors	
		Full Paper	Support and Scandals in GameFI DApps: A Network Analysis of The Sandbox Transactions Fernando Spadea and Oshani Seneviratne
		Authors	
		Full Paper	A Differentially Private Blockchain-Based Approach for Vertical Federated Learning Linh Tran, Sanjay Chari, Md. Saikat Islam Khan, Aaron Zachariah, Stacy Patterson, and Oshani
		Authors	
		Full Paper	Characterizing Polkadot's Transactions Ecosystem: methodology, tools, and Insights Maurantonio Caprolu, Roberto Di Pietro, Flavio Lombardi, and Elia Onofri
		Authors	
12:15pm-01:15pm Lunch			
01:30pm-02:20pm	Building Room	东上院100 (East Upper Court 100)	Joint Online Keynote Session 3 - Session Chair: Jie Xu, University of Leeds, UK Topic: Artificial Intelligence for Biometric Technologies and Systems Speaker: Vincenzo Piuri, Professor, IEEE Fellow, University of Milan Italy
02:30pm-04:00pm	Building Room East Upper House 212	Session 2 Paper ID	Blockchain Performance and Optimization - Session Chair: Xiaojie Zhu Full-Papers(F) Paper Title
		Full Paper	Operating ZKPs on Blockchain: A Performance Analysis Based on Hyperledger Fabric Rui Pan, Zeshun Shi, Adam Belloum, and Zhiming Zhao
		Authors	
		Full Paper	ProfitMax: Optimizing Blockchain Mining for Energy Efficiency and Profitability Daewoong Cho, Gowri Ramachandran, Raja Jurdak, and Salil Kanhere
		Authors	
		Short Paper	Optimal Settings for Cryptocurrency Trading Pairs Di Zhang, Youzhou Zhou, Hengyan Liu, Bintao Hu, and Wenzhang Zhang
		Authors	
		Poster Paper	Rebalancing Threshold Strategy with Trend Following Against Impermanent Loss Shuntaro Tanaka and Baptiste Alcade
		Authors	
04:00pm-04:30pm Tea Break			
04:30pm-06:00pm	Building Room East Upper House 212	Session 3 Paper ID	SECURITY, REDACTION, AND IDENTITY - Session Chair: Kaiwen Zhang Full-Papers(F) Paper Title
		Full Paper	Operating ZKPs on Blockchain: A Performance Analysis Based on Hyperledger Fabric Imane El Abid and Yahya Benkaouz
		Authors	
		Short Paper	A Middleware Architecture for Self-Sovereign Identity Authentication and Authorization Felix Hoops and Florian Matthes
		Authors	
		Short Paper	Temporarily Restricting Solidity Smart Contract Interactions Valerian Callens, Zeeshan Meghji, and Jan Gorzny
		Authors	
06:0pm-06:30pm Large Group Photo Session I			

The 6th IEEE International Conference on Decentralized Applications and Infrastructures (IEEE DAPPS 2024)

July 15-18, 2024 | Shanghai, China

Date: 7/17/2024

Location Keynote Sessions at 东上院100 (East Upper Court 100)
Conference Program Sessions at East Upper House 212

Time: 8:00am - 6:00pm		Registration	
09:00am-09:45am	东上院100 (East Upper Court 100)	Session Topic Speaker	Joint Keynote Session 5 - Session Chair: Kaiwen Zhang Blockchain solutions and Made in Italy Blockchain Solutions and Made in Italy Roberto Tonelli, Professor, University of Cagliari, Italy
09:45am - 10:45am	东上院100 (East Upper Court 100)	Session Topic Panelists	Joint Plenary Session 1 - Moderators: Hong Zhu and Dunhai Ding GenAI, Where Are You Going? Prof. Fei Wu, AI Research Institute, Zhejiang University, China Dr. Kumi, AI Voice, UK Dt. Emese Bari, VISA, USA Dr. Chaoyi Chen, MeiTuan.com, China
10:45am - 11:00am		Tea Break	
11:00am-12:30pm	Building Room East Upper House 212	Session 4 Paper ID Short Paper Short Paper Short Paper Poster Paper	Innovative Applications and Machine Learning - Session Chair: Xiaojie Zhu Paper Title SDT: Towards a Blockchain-Based Secure Data Trading Application Manish Adhikari, Feng Wang, Chung-Chih Li, Guang Cheng, and Yongning Tang Entity Detection in EVM-based Blockchain Networks using Machine Learning Huy Hai Nguyen, Tung Trinh, Binh Minh Nguyen, Duc Tran, and Thang Nguyen The Waku Network as Infrastructure for dApps Hanno Cornelius, Sergei Tikhomirov, Simon Pierre Vivier, Alvaro Revuelta, and Aaryamann Challani
12:30pm-01:30pm		Lunch	
01:30pm-02:20pm	东上院100 (East Upper Court 100)	Location Session Topic Speaker	Joint Keynote Session 6 - Session Chair: Fanjing Meng Practices of Machine Learning and Optimization with Quantum Computing YuXiang CHEN, IBM Distinguished Engineer, IBM
05:15pm - 06:15pm		Tea Break	
05:15pm - 06:15pm	东上院100 (East Upper Court 100)	Location Session Topic Plenellists	IEEE Plenary Session 2 (Hybrid Session)- Moderators: Monowar Bhuyan Ethical and Social Implications of AI Dr. Longzi Hong Dr. James Ong Prof. Hong Zhu Prof. Junhua Ding
03:30am - 04:00am		Tea Break	
06:15pm-6:30pm		Large Group Photo Session II	
06:30pm - 8:30pm		Conference Award Ceremony and Dinner	

IEEE JCC 2024 - The 15th IEEE International Conference on JointCloud Computing

Date: 7/16/2024

Location Keynote Sessions at 东上院100 (East Upper Court 100)
Conference Program Sessions at East Upper House 205

Time: 8:0am - 6:0pm		Registration	
09:00am-09:30am		Joint IEEE CISOSE2024 Opening Session - Session Chair: Wen Wu, Zhejiang University, China	
09:30am-10:30am	东上院100 (East Upper Court 100)	Location Session Topic Speaker	Joint Keynote Session 3 - Session Chair: Jerry Gao, San Jose State University, USA Powering Real-World Transformation with Big Data and Machine Learning Xiaoli Li, Professor, IEEE Fellow, Institute for Infocomm Research, A*STAR
10:30am - 10:45am		Tea Break	
10:45am - 12:15pm	Building Room East Upper House 205	Session 1 Paper ID Paper Type Paper Title	Core Infrastructure I - Session Chair Haibo Chen, Jia Tong University, China PrometheusMigrate: Efficient Live Migration of Confidential Virtual Machine with Software Abstract Chenhui Ji, Dingji Li, Zeyu Mi, and Yubin Xia The Design and Optimization of Memory Ballooning in SEV Confidential Virtual Machines Jinghao Wang, Guangzu Wang, Tianyu Wo, Xu Wang, Renny Yang Wang PrecisionProbe: Non-intrusive Performance Analysis Tool for Deep Learning Recommendation Training Jobs Yaojie Li, Peichang Shi, Rui Li, Fei Gao, Penghui Ma, Dong Xie, Guodong Yi
12:15pm-01:15pm		Lunch	
01:30pm-02:20pm	东上院100 (East Upper Court 100)	Location Session Topic Speaker	Joint Keynote Session 4 - Session Chair: Jie Xu Topic: Artificial Intelligence for Biometric Technologies and Systems Speaker: Vincenzo Pluri, Professor, IEEE Fellow, University of Milan, Italy Core Infrastructure II - Session Chair: Paul Townsend
02:30pm-04:00pm	Building Room East Upper House 205	Session 2 Paper ID Paper Type Paper Title	DCSA:The Deployment Mechanism of Chained Serverless Applications in JointCloud Environment Yaojie Li, Peichang Shi, Jianfei Liu, Rui Li, Fei Gao, Penghui Ma, Dong Xie, and Guodong Yi A Study on the Performance of Distributed Storage Systems in Edge Computing ntonios Makris, Ioannis, Kontopoulos, Stylianos Nektarios Xyalis, Evangelos Psoimakelis, Teodoros Theodoropoulos, Andreas Varvarigos, Konstantinos Tserpes RESCAPE: Resource Estimation System for Microservices with Graph Neural Network and Profile Engine Jinghao Wang, Guangzu Wang, Tianyu Wo, Xu Wang, and Renny Yang
04:00pm-04:30pm		Tea Break	
04:30pm - 06:00pm	Building Room East Upper House 205	Session 3 Paper ID FullPapers(F) Paper Title	Scheduling and Optimization - Session Chair: Victor Sanchez-Anguix? B-Objective Scheduling Algorithm for Hybrid Workflow in JointCloud Jie Wang, Huanxi Liu, Dawei, Feng, and Bo Ding F3A: Fairness-Aware AI-Workloads Allocation Considering Multidimensional User Demands in JointCloud Jiecheng Yang, Guodong Yi, Fei Gao, Peichang Shi, Huaimin Wang Parallel Computation in Dynamic Fog Computing Networks: A Multi-Armed Bandit Learning-based Decentralized Matching Approach Hua Tran Dang, Seong Kim
06:0pm-06:30pm		Large Group Photo Session I	

IEEE JCC 2024 - The 15th IEEE International Conference on JointCloud Computing

Date: 7/17/2024

Location Keynote Sessions at 东上院100 (Easter Upper Court 100)
Conference Program Sessions at East Upper House 205

Time: 8:0am - 6:0pm		Registration	
09:00am-09:45am	东上院100 (East Upper Court 100)	Location Session Topic Speaker	Joint Keynote Session 5 - Session Chair: Kaiwen Zhang Blockchain solutions and Made in Italy Blockchain Solutions and Made in Italy Roberto Tonelli, Professor, University of Cagliari, Italy
09:45am - 10:45am	东上院100 (East Upper Court 100)	Session Topic Panelists	Joint Plenary Session 1 - Moderators: Hong Zhu and Dunhai Ding GenAI, Where Are You Going? Prof. Fei Wu, AI Research Institute, Zhejiang University, China Dr. Kumi, AI Voice, UK Dt. Emese Bari, VISA, USA Dr. Chaoyi Chen, MeiTuan.com, China
10:45am - 11:00am		Tea Break	
11:00am - 12:30pm	Building Room East Upper House 205	Session 4 Paper ID FullPapers(F) Paper Title	Artificial Intelligence and Applications I - Session Chair: Kele Xu FP4-Quantization: Lossless 4bit Quantization for Large Language Models Jie Wang, Huanxi Liu, Dawei Feng, Do Ding Understanding the Challenges of Data Management in the AI Application Development Junchen Li, Yang Zhang, Kele Xu, Tao Wang, Huaimin Wang A recommendation system based on the semantic content using Arabic texts Rasha Kadhem, Mazin S. Mohammed, Souheyl Mallat, and Mounir Zrigui

12:30pm-01:30pm		Lunch	
01:30pm-02:20pm	Location	Session	Joint Keynote Session 6 - Session Chair: Fanjing Meng
	东上院100 (East Upper Court 100)	Topic	Practices of Machine Learning and Optimization with Quantum Computing
		Speaker	YuXiang CHEN, IBM Distinguished Engineer, IBM
02:30pm -04:00pm		Session 5	Artificial Intelligence and Applications II - Session Chair: Kele Xu
Building Room East Upper House 205	Paper ID	Full-Papers(F)	Paper Title
	9278	Short Paper	IBCm: An IoT Solution for Building Collapse Monitoring in Smart Cities
		Authors	Chao Wang, Suzhen Pei, Jiawei Ding, and Tianyu Zhong, and Ribin Wu
	6524	Short Paper	The cost perspective of adopting Large Language Model-as-a-Service
	Authors	Vasiliki Liagkou, Evangelia Filiopoulou, Geroge Fragiadakis, Mara Nikolaidou, Christos Miac	
04:00pm - 04:30pm		Tea Break	
04:30pm - 05:15pm	Location	Session	IEEE CISOSE Joint Keynote Session 7 - Session Chair: Xiaotian Xu, IBM, China
	东上院100 (East Upper Court 100)	Topic	Research and Application of Forestry AI
		Speaker	Fu Xu, Professor of Beijing Forestry University
			Dean of School of Information Science and Technology Dean of School of Artificial Intelligence of BJFU
05:15pm - 6:30pm	Location	Session	IEEE Plenary Session 2 - Moderators: Monowar Bhuyan
	东上院100 (East Upper Court 100)	Topic	Ethical and Social Implications of AI
		Panelists	Dr. Longzi Hong James Ong Prof. Hong Zhu Prof. Junhua Ding
06:15pm-6:30pm		Large Group Photo Session II	
06:30pm - 8:30pm		Conference Award Ceremony and Dinner	

IEEE SOSE 2024 - The 18th IEEE International Conference on Service-Oriented System Engineering

Date: 7/16/2024

Location Keynote Sessions at 东上院100 (Easter Upper Court 100)
Conference Program Sessions at East Upper House 207

Time: 8:0am - 6:0pm		Registration	
09:00am-09:30am		Joint IEEE CISOSE2024 Opening Session - Session Chair: Wen Wu, Zhejiang University, China	
09:30am-10:30am	Location	Session	Joint Keynote Session 3 - Session Chair: Jerry Gao, San Jose State University, USA
	东上院100 (East Upper Court 100)	Topic	Powering Real-World Transformation with Big Data and Machine Learning
		Speaker	Xiaoli Li, Professor, IEEE Fellow, Institute for Infocomm Research, A*STAR
10:30am - 10:45am		Tea Break	
10:45pm-12:15pm		Session 1	CLOUD SERVICES - Session Chair: Paul Townend
Building Room East Upper House 207	Paper ID	Paper Type	Paper Title
	30	Full Paper	State of the Art and Challenges of Issue Management for Component-based and Service-Oriented Systems: An Empirical Study
		Authors	Sandro Speth, Niklas Meißner, Steffen Becker and Uwe Breitenbücher.
	30?	Full Paper	Diffusing High-level SLO in Microservice Pipelines
	Authors	Boris Sedlak, Víctor Casamayor Pujol, Praveen Kumar Donta and Schahram Dustda	
	20	Short Paper	WIPI: Towards Cloud-based Wildland Fire Simulation Service
		Authors	Xiaolin Hu, Mingxi Yan, Tony Derado, Wei Zhao, Bernard Zeigler, Doohwan Kim and Chungman Seo
12:15pm-01:15pm		Lunch	
01:30pm-02:20pm	Location	Keynote Session	Joint Keynote Session 4 - Session Chair: Jie Xu, University of Leeds, UK
	东上院100 (East Upper Court 100)	Topic	Artificial Intelligence for Biometric Technologies and Systems
		Speaker	Vincenzo Piuri, Professor, IEEE Fellow, University of Milan Italy
02:30pm-04:00pm		Session 2	Service Orchestration - Session Chair: Paul Townend/Yingshen Li, Fu Dan University, China
Building Room East Upper House 207	Paper ID	Paper Type	Paper Title
	30	Full Paper	A stable matching approach to Energy Efficient and Sustainable Serverless Scheduling for the Green Cloud Continuum
		Authors	Yashwant Singh Patel and Paul Townend.
	30?	Full Paper	Time Series Predictions for Cloud Workloads: A Comprehensive Evaluation
	Authors	Anna Lackinger, Andrea Morichetta and Schahram Dustdar.	
	20	Short Paper	Towards an API-driven Approach for Universal and Lightweight Cloud-Edge Orchestration
		Authors	Sebastian Böhm and Guido Wirtz.
04:00pm-04:30pm		Tea Break	
04:30pm-06:00pm		Session 3	DISTRIBUTED APPLICATIONS - Session Chair: Yingshen Li, Fu Dan University, China
Building Room East Upper House 207	Paper ID	Paper type	Paper Title
		Full-Papers(F)	DIDChain: Advancing Supply Chain Data Management with Decentralized Identifiers and Blockchain
		AUthors	Patrick Herbke, Sid Lamichhane, Kaustabh Barman, Sanjeet Raj Pandey, Axel Küpper, Andreas Abraham and Markus Sabadello
		Full-Papers(F)	Distributed Model Serving for Real-time Opinion Detection
		Authors	Vasiliki Liagkou, Evangelia Filiopoulou, Geroge Fragiadakis, Mara Nikolaidou, Christos Miac
	Short Paper	Blockchain-Enabled Verifiable Receipt Credentials for Traceability in EV Battery Supply Chains	
	Authors	Kaustabh Barman, Patrick Herbke, Elias Safo and Luca Janssen	
06:0pm-06:30pm		Large Group Photo Session I	

The 12th IEEE International Conference on Intelligent Mobile Computing (IEEE IMC 2024)

Date: 7/17/2024

Location Keynote sessions are located at 东上院100 (Easter Upper Court 100)
Conference Program Sessions at East Upper House 207

Time: 8:0am - 6:0pm		Registration	
09:00am-10:30am		Joint Keynote Session 5 - Session Chair: Kaiwen Zhang	
09:00am-10:30am	Location	Keynote Session	Topic: Blockchain solutions and Made in Italy Blockchain Solutions and Made in Italy
	东上院100 (East Upper Court 100)	Topic	Speaker: Roberto Tonelli, Professor, University of Cagliari, Italy
		Speaker	
10:30am - 10:45am		Tea Break	
10:45am-12:15pm		Session 1	Mobile Computing Architecture - Session Chair: Hiroyuki Sato, Tokyo University, Japan
Building Room East Upper House 207	14	Full Papers	Navigating Enterprise Constraints: Building a Hybrid Multi-Modal Mobile Intelligent App
		Authors	Ketan Malempati, Akshat Gupta and Kaikai Liu
	19	Full Papers	LSAC: A Lightweight, Scalable, and Anonymous Cross-Domain Authentication Scheme in IoT
		Authors	Lyhour Hak, Somchart Fugkeaw and D542Hiroyuki Sato
	15	Short Papers	AI-POWERED CAREER MASTERY: YOUR SUCCESS JOURNEY UNVEILED
	Authors	Jaishree Jain, Atishay Agarwal, Ayushi Singhal, Palkin Garg and Sneha Arya	
	12	Full Papers	Sorting through ML algorithms: A call for community contributions
		Authors	Lokman Saleh, Hafedh Mili and Mounir Boukadoum
12:15pm-01:30pm		Lunch	

01:30 - 02:20pm	Location 东上院100 (East Upper Court 100)	Session Topic Speaker	Joint Keynote Session 6 - Session Chair: Fanjing Meng, IBM, China Practices of Machine Learning and Optimization with Quantum Computing YuXiang CHEN, IBM Distinguished Engineer, IBM
02:30pm-04:00pm	Session 2	9	Mobile Computing for Detection - Session Chair: Fan Wu, Jiao Tong University, China
Building Room East Upper House 207		Full Papers	Safeguarding the Smart Home: Heterogeneous Federated Deep Learning for Intrusion Defense
		Authors	Mohammed Shalan, Juan Li and Yan Bai
	10	Full Papers	Cost-Sensitive Road Obstacle Detection for Low-Cost Autonomous Vehicles
		Authors	Kai Su, Qiangfu Zhao, Yoichi Tomioka and Yong Liu
	4	Short Papers	Detection of Facial Expression in an Video Using Deep Learning Technology
		Authors	Vaishnavi Gupta, Stuti Agarwal, Aayushi Agarwal and Yogendra Narayan Prajapati
04:00pm-04:30pm	Tea Break		
04:30pm-06:00pm	Session 3	7	Mobile Computing for Life Science - Session Chair: Jun Liu, San Jose State University, USA
Building Room East Upper House 202		Short Papers	New Methods for Animal Detection in Camera Trap Image Sequences
		Authors	Yizhen Wang, Junlin Wang and Yi Shang
	8	Full Papers	Enhancing Adaptive Deep Brain Stimulation via Efficient Reinforcement Learning
	10	Full Papers	Jessi Mehregan, Xiaoyong Yuan, Gaurav Bagwe, Jacob Jackson, Ezedin Mohammed, Lan Zhang and Chunxiu Yu
		Authors	Cost-Sensitive Road Obstacle Detection for Low-Cost Autonomous Vehicles Kai Su, Qiangfu Zhao, Yoichi Tomioka and Yong Liu
04:00pm-04:30pm	Tea Break		
04:30pm - 05:15pm	Location 东上院100 (East Upper Court 100)	Session Topic Speaker	IEEE CISOSE Joint Keynote Session 7 - Session Chair: Xiaotian XU, IBM, China Research and Application of Forestry AI Fu Xu, Professor of Beijing Forestry University Dean of School of Information Science and Technology Dean of School of Artificial Intelligence of BJFU
05:15pm - 6:30pm	Location 东上院100 (East Upper Court 100)	Session Topic Panelists	IEEE Plenary Session 2 - Moderator: Moderators: Monowar Bhuyan Ethical and Social Implications of AI Dr. Longzi Hong James Ong Prof. Hong Zhu and Prof. JunHua Ding
06:15pm-6:30m	Large Group Photo Session II		
06:30pm - 8:30pm	Conference Award Ceremony and Dinner		

1st IEEE International Workshop on Future Intelligent Technologies for Young Researchers (IEEE FITYR2024)

Location Keynote sessions are located at 东上院100 (Easter Upper Court 100)
IEEE FITYR2024 Program Sessions are located at E谷-悟课剧场 (Theater)

Date: 7/16/2024

Time: 8:0am - 6:0pm	Registration		
09:00am-09:30am	Joint IEEE CISOSE2024 Opening Session - Session Chair: Wen Wu, Zhejiang University, China		
09:30am-10:30am	Location 东上院100 (East Upper Court 100)	Session Topic Speaker	Joint Keynote Session 3 - Session Chair: Jerry Gao, San Jose State University, USA Powering Real-World Transformation with Big Data and Machine Learning Xiaoli Li, Professor, IEEE Fellow, Institute for Infocomm Research, A*STAR
10:30am - 10:45am	Tea Break		
10:45am - 12:15pm	Session 1	Paper ID	Machine Learning and AI in Avionics - Session Chair: Iraklis Varlamis
Building Room E谷-悟课剧场 (Theater)		Full Paper	Building an AI-Based Surveillance Drone Cloud Platform
		Authors	Tirumala Saiteja Goruganthu, Harish Marepalli, Sowjanya Bheemini, Reshma Chowdary Babba, David Wang, Shakshi Irchharya, and Jerry Gao
		Full Paper	An LSTM-based Target Tracking Method for High Mobility UAV Under Incomplete Information Conditions
		Authors	Li Liu, An Zhang, Wenhao Bi and Zhanjun Huang.
	Full Paper	Research on Optimization Method of Civil Aircraft Design Activities under Generalized Precedence Relations	
	Authors	Yanlong Han, Qiucen Fan, Wenhao Bi and An Zhang.	
12:15pm-01:15pm	Lunch		
01:30pm-02:20pm	Location 东上院100 (East Upper Court 100)	Session Topic Speaker	Joint Keynote Session 2 - Sesion Chair: Jie Xu Artificial Intelligence for Biometric Technologies and Systems Vincenzo Piuri, Professor, IEEE Fellow, University of Milan Italy
02:30pm-04:00pm	Session 2	Paper ID	Machine Learning and AI Applications - Session Chair: Xiaotian Xu
Building Room E谷-悟课剧场 (Theater)		Full Paper	Dense 3D Reconstruction with Fusing Structure from Motion and Dynamic Photometric Stereo
		Authors	Shengran He, Yifan Yin, Yeling Jiang and Hao Fan.
		Full Paper	An Efficient EKF-Based Visual Inertial Odometry Using Both Point and Line Features
		Authors	Tong Ning, Zhiyuan Zhang and Hao Fan.
		Full Paper	Enhancing Printed Circuit Board Defect Detection through Ensemble Learning.
		Authors	Ka Nam Canaan Law, Mingshuo Yu, Lianglei Zhang, Yiyi Zhang, Peng Xu, Jerry Gao and Jun Liu
		Short Paper	Meta-Path Guided Heterogeneous Social Occasion Service Composition Embedding Based on BERT
	Authors	Xingkai Guan, An Zhang, Sihan Yao, Wenhao Bi and Zhanjun Huang.	
04:00pm-04:30pm	Tea Break		
04:30pm-06:00pm	Session 3	Paper ID	Health applications of ML and AI - Session Chair: Xiaotian Xu
Building Room E谷-悟课剧场 (Theater)		Full Paper	A Novel Depression Detection Model Based on Hybrid Neural Network.
		Authors	Zhuozheng Wang, Yihan Wang, Xixi Zhao, Jingru Song, Gang Wang and Lei Feng.
		Full Paper	Hydrogen Nanobubbles Enhance Sensitivity of Drug-Resistant Cancer Cells.
		Authors	Han Li, Zheng Dang, Xuemei Ma and Pengxiang Zhao.
	Short Paper	Depression Detection and Recognition Research Based on Audio Analysis and Artificial Intelligence	
	Authors	Zhuozheng Wang, Yunlong Wang, Xixi Zhao, Xiaofan Zhou, Gang Wang and Lei Feng.	
06:0pm-06:30pm.	Large Group Photo Session I		

1st IEEE International Workshop on Future Intelligent Technologies for Young Researchers (IEEE FITYR2024)

Location Keynote sessions are located at 东上院100 (Easter Upper Court 100)
IEEE FITYR2024 Program Sessions are located at E谷-悟课剧场 (Theater)

Date: 7/17/2024

Time: 8:0am - 6:0pm	Registration		
Time	Session Information		
09:00am-09:45am	Location 东上院100 (East Upper Court 100)	Session Topic Speaker	IEEE CISOSE Joint Keynote Session 5 - Session Chair: Kaiwen Zhang Blockchain solutions and Made in Italy Blockchain Solutions and Made in Italy Roberto Tonelli, Professor, University of Cagliari, Italy
09:45am - 10:45am	Location 东上院100 (East Upper Court 100)	Session Topic Panelists Virtual Panlists	IEEE CISOSE Joint Plenary #1 - Moderator: Hong Zhu and Dunhai Ding GenAI, Where Are You Going? Fei Wu, AI Research Institute, Zhejiang University, China Dr. Kumi, AI Voice, UK, Dr. Emese Bari, VISA, USA, Dr. Chaoyin Chen, MeiTuan.com, China

10:45am - 11:00am	Tea Break		
11:00am - 12:30pm	Session 4: Materials and applications - Chair: Guangnan Ye		
Building Room E谷-悟课剧场 (Theater)	Paper ID	Paper Type	Paper Title and Authors
		Full Paper	Magnetic Control of 4D Printing Materials and Soft Robotics Research. Shanghai Yi, Yi Fang, Xudong Sun and Zhenkun Li
		Authors	
		Full Paper	Research on Magnesium-Based Hydrogen Storage Materials Promoting the Activity of Keratinocyte Formation and Epithelialization Process. Ziyi Liu, Xujuan Zhang, Zheng Dang, Xiaohu Wen, Shihao Jiang, Xuemei Ma and Pengxiang Zhao
		Authors	
		Short Paper	FDM-based magnetically enhanced 3D printing of plastic materials Xudong Sun, Jinfeng Huang, Yi Fang, Yifei Guo, Shanghai Yi and Zhenkun Li
		Short Paper	Rheological study of a 4D printed magnetic soft material based on neodymium-iron-boron Zeyi Chen and Zhenkun Li.
		Authors	
12:30pm-01:30pm	Lunch		
01:30pm-02:20pm	Location 东上院100 (East Upper Court 100)	Session Topic Speaker	Joint Keynote Session 6: Session Chair: Fanjing Meng Practices of Machine Learning and Optimization with Quantum Computing YuXiang CHEN, IBM Distinguished Engineer, IBM
02:20pm-04:00pm E谷-悟课剧场 (Theater)			IEEE FITYR 2024 Large Group Discussion, Session Chair: Organization Team
04:00pm-04:30pm	Tea Break		
04:30pm - 05:15pm	Location 东上院100 (East Upper Court 100)	Session Topic Speaker	IEEE CISOSE Joint Keynote Session 7: Session Chair: Xiaotian Xu Research and Application of Forestry AI Fu Xu, Professor of Beijing Forestry University Dean of School of Information Science and Technology Dean of School of Artificial Intelligence of BJFU
			IEEE Plenary Session 2: Moderators: Monowar Bhuyan Ethical and Social Implications of AI Dr. Longzi Hong, James Ong, and Junhua Ding James Ong, Hong Zhu
05:15pm - 6:30pm	Location Microelectronics Academic Lecture Hall	Session Topic Panelists	
06:15pm-6:30m	Large Group Photo Session II		
06:30pm - 8:30pm	Conference Award Ceremony and Dinner		

2024 IEEE Future Technology Summit (IEEE FTS2024)
Jiao Tong University, Shanghai, China

Day 4
2024/7/18

Location Building #1 - Microelectronics academic lecture Hall
Building #2 -School of Electronics, Information and Electrical Engineering 3-100 (EIEE 3-100)

Registration Time: 8:0am – 5:0pm

Registration Table at the entry of Microelectronics Academic Lecture Hall

Schedule Time	Building and Room	Program Session Information
09:00am - 09:30am	Microelectronics	IEEE Future Technology Summit Opening Session
09:00am-09:05am		Session Chair: Wen Wu, Professor of International Business School of Zhejiang University, China
09:00am - 09:05am	Welcome	Welcome Opening Announcement by IEEE FTS Organizers Organization Chair(s) (Jerry Gao, Sato, Daniel Zhu)
09:10am - 09:15am	Sponsor's Remarks	Welcome Remarks by Co-Sponsors (Zhejiang University and Jiao Tong University)
09:15am - 09:30am	Program Overview	Program Overview by IEEE FTS Program Chair(s)
09:30am -10:30am	Microelectronics academic lecture Hall	FTS Session #1 - AI for Humanity and Society Session Chair: Jerry Gao, San Jose State University, USA
09:30am -10:00am	Topic Speaker	Aligning AI with "Sustainable AI for Humanity" James Ong, Founder & Managing Director, Artificial Intelligence International Institute (AIII) and Adjunct Professor, Singapore University of Technology & Design (SUTD) && AI Mega Centre
10:00am - 10:30am	Topic Speaker	Data Assets as Digital Assets in Web3 Wei-Tek Tsai, Professor, Arizona State University, Tempe, Arizona, USA
10:30am – 11:00am	Tea Break	
11:00am - 12:30pm	Microelectronics academic lecture Hall	FTS Session #2 - Large Language Model Tasks and Training Session Chair: Hiroyuki Sato, Tokyo University, Japan
11:00am – 11:30am	Topic Speaker	LLM for Domain-Specific Tasks Fei WU, head of AI Research Institute, Professor, Zhejiang University
11:30am – 12:00pm	Topic Speaker	Optimizing Training for Large Language Models: Balancing Various System Forces Jie XU, Chair of Computing at the University of Leeds
12:00pm – 12:30pm	Topic Speaker	Scenario-based Testing and Evaluation of Large Language Models for Code Generation Hong Zhu, Professor of computer science at the Oxford Brookes University, Oxford, UK
12:30pm – 01:30pm	Lunch Time	
01:30pm – 02:00pm	IEEE FTS2024 Large Group Photo Session I	



IEEE Future Technology Summit 2024 Program Has Two Concurrent Afternoon Sessions in Two Different Buildings

2024/7/18

Building #1 - Microelectronics academic lecture Hall
 Building #2 -School of Electronics, Information and Electrical Engineering 3-100 (EIEE 3-100)

Schedule Time	Building and Room	Program Session Information
02:00pm – 03:00pm	Microelectronics academic lecture Hall	FTS Session #3 - Tomorrow's Smart Agriculture Session Chair: Hiroyuki Sato, University of Tokyo, Japan
02:00pm – 02:30pm	Topic	Advanced Smart Agriculture and Machine Learning
	Speaker	Jerry Gao, Professor, San Jose State University, USA
02:30pm – 3:00pm	Topic	Environmental Control and Inspection for Smart City in the Future
	Speaker	Chang Peng Xu, CTO, Gopha Group, China
03:00pm – 03:30pm		Tea Break
Schedule Time	Building and Room	Program Session Information
03:30pm – 04:00pm	Microelectronics academic lecture Hall	FTS Session #4 - AI for Tomorrow Session Chair: Jane Wu, Managing Director, BRI Capital Partners, USA
	Topic	AI: Where it comes from and Where it goes for Tomorrow
	Speaker	Ronjon Nag, Founder R42, Inventor, Adjunct Professor in Genetics, Stanford Medicine
06:30pm - 08:30pm		Certificate and VIP Dinner
04:00pm – 4:30pm	Microelectronics academic lecture Hall	FTS Session #5 - Digital Economy - Today and Tomorrow Session Chair: Prof. Wu Wen, Zhejiang University, Shanghai, China
	Topic	Digital Economy - Today and Tomorrow
	Speaker	Wen Wu, Professor of International Business School of Zhejiang University, China
04:30pm - 04:45pm		Tea Break
Schedule Time	Building and Room	Program Session Information
04:45pm - 6:00pm	Microelectronics academic lecture Hall	FTS Plenary #1 - AI Investment for Future Technology Moderator: Jane Wu, BRI, USA
	Panelists	Bing Fu Wang Jeff Lin, Partner at iGlobePartners (VC) Xitai Sheng, Founding Partner @ SunPig
06:00pm - 06:30pm		IEEE FTS2024 Large Group Photo Session II

2024/7/18

IEEE FTS 2024 Concurrent Session in School of Electronics, Information and Electrical Engineering 3-100 (EIEE 3-100)

Concurrent Sessions	Location	电子信息与电气工程学院 3号楼-100 (School of Electronics, Information and Electrical Engineering 3-100)
Schedule Time	Building and Room	Program Session Information
02:00pm – 03:00pm	EIEE 3-100	FTS Session #6 - Environment, ESG, and Sustainability Session Chair: Daniel ZHU
02:00pm - 02:20pm	Topic	Ethical AI from Biodiversity Perspective
	Speaker	Jin Feng ZHOU, Secretary-General China Biodiversity Conservation and Green Development Foundation
02:20pm - 02:40pm	Topic	Green Design, AI, and Sustainability
	Speaker	Xing LEI, Director-General of the World Green Design Organization Chairman of Beijing Dragon Design Foundation
02:30pm - 03:00pm	Topic	AI in Transition towards Silicon Life
	Speaker	Daniel ZHU, Mentor, x-lab, Qinghua University
03:00pm – 03:30pm		Tea Break
03:30pm - 04:30pm	EIEE 3-100	FTS Plenary #2 - Smart Machine in Traditional Chinese Medicine Moderator: JingJing Xu, Co-Funder of Beijing Smart Healthcare Association, China
03:30pm – 03:50pm		Topic: Smart Machine in Traditional Chinese Medicine Speaker: John Yu, Co-founder/CEO of Beijing Smart Health Technologies Co. Chief AI Think Tank Officer
04:00pm - 04:30pm	Panel Discussion	Weimin Xu, Founder and Chairman of Shanghai Minkun Health Services Group
	Panelists	Deming Hao, Secretary General, Association of Chinese Privately Owned Medical Institutions
04:30pm - 05:00pm	EIEE 3-100	FTS Session #7 - Responsible AI: Building Trust and Ethics in the Age of AI Session Chair: Xiaotian Xu, IBM, China
	Topic	Topic: Responsible AI: Building Trust and Ethics in the Age of AI
	Speaker	Speaker: Fanjing Meng, IBM, China
06:00pm - 06:30pm		Large Group Photo Session II
06:00pm - 8:30pm		Certificate and VIP Dinner



03

Day 4
2024/7/18

2024 IEEE Future Technology Summit (IEEE FTS2024)

Jiao Tong University, Shanghai, China

<https://ieeefuturetechnology.com/>

Schedule Time	Building and Room	Program Session Information
Registration Time: 8:0am – 5:0pm		
Registration Table at the entry of Microelectronics Academic Lecture Hall		
09:00am - 09:30am	Microelectronics academic lecture Hall	IEEE Future Technology Summit Opening Session
09:00am-09:05am		Session Chair: Wen Wu, Professor of International Business School of Zhejiang University, China
09:00am - 09:05am	Welcome	Welcome Opening Announcement by IEEE FTS Organizers
		Organization Chair(s) (Jerry Gao, Sato, Daniel Zhu)
09:10am - 09:15am	Sponsor's Remarks	Welcome Remarks by Co-Sponsors (Zhejiang University and Jiao Tong University)
09:15am - 09:30am	Program Overview	Program Overview by IEEE FTS Program Chair(s)
09:30am -10:30am	Microelectronics academic lecture Hall	FTS Session #1 - AI for Humanity and Society
		Session Chair: Jerry Gao, San Jose State University, USA
09:30am -10:00am	Topic	Aligning AI with "Sustainable AI for Humanity"
	Speaker	James Ong, Founder & Managing Director, Artificial Intelligence International Institute (AIII) and Adjunct Professor, Singapore University of Technology & Design (SUTD) && AI Mega Centre
10:00am - 10:30am	Topic	Data Assets as Digital Assets in Web3
	Speaker	Wei-Tek Tsai, Professor, Arizona State University, Tempe, Arizona, USA
10:30am – 11:00am	Tea Break	
11:00am - 12:30pm	Microelectronics academic lecture Hall	FTS Session #2 - Large Language Model Tasks and Training
		Session Chair: Hiroyuki Sato, Tokyo University, Japan
11:00am – 11:30am	Topic	LLM for Domain-Specific Tasks
	Speaker	Fei WU, head of AI Research Institute, Professor, Zhejiang University
11:30am – 12:00pm	Topic	Optimizing Training for Large Language Models: Balancing Various System Forces
	Speaker	Jie XU, Chair of Computing at the University of Leeds
12:00pm – 12:30pm	Topic	Scenario-based Testing and Evaluation of Large Language Models for Code Generation
	Speaker	Hong Zhu, Professor of computer science at the Oxford Brookes University, Oxford, UK
12:30pm – 01:30pm	Lunch Time	
01:30pm – 02:00pm	Large Group Photo Time	
IEEE Future Technology Summit 2024 Program Has Two Concurrent Afternoon Sessions in Two Different Buildings		
Building #1 - Microelectronics academic lecture Hall		
Building #2 -School of Electronics, Information and Electrical Engineering 3-100 (EIEE 3-100)		
Schedule Time	Building and Room	Program Session Information
02:00pm – 03:00pm	Microelectronics academic lecture Hall	FTS Session #3 - Tomorrow's Smart Agriculture
		Session Chair: Hiroyuki Sato, University of Tokyo, Japan
02:00pm – 02:30pm	Topic	Advanced Smart Agriculture and Machine Learning
	Speaker	Jerry Gao, Professor, San Jose State University, USA
02:30pm – 3:00pm	Topic	Environmental Control and Inspection for Smart City in the Future
	Speaker	Chang Peng Xu, CTO, Gopha Group, China

03:00pm – 03:30pm		Tea Break	
Schedule Time	Building and Room	Program Session Information	
03:30pm – 04:00pm	Microelectronics academic lecture Hall	FTS Session #4 - AI for Tomorrow	
		Session Chair: Jane Wu, Managing Director, BRI Capital Partners, USA	
		Topic: AI: Where it comes from and Where it goes for Tomorrow	
	Speaker	Ronjon Nag, Founder R42. Inventor, Adjunct Professor in Genetics, Stanford Medicine	
04:00pm – 4:30pm	Microelectronics academic lecture Hall	FTS Session #5 - Digital Economy - Today and Tomorrow	
		Session Chair: Prof. Wu Wen, Zhejiang University, Shanghai, China	
		Topic: Digital Economy - Today and Tomorrow	
	Speaker	Wen Wu, Professor of International Business School of Zhejiang University, China	
04:30pm – 04:45pm		Tea Break	
Schedule Time	Building and Room	Program Session Information	
04:45pm – 6:00pm	Microelectronics academic lecture Hall	FTS Plenary #1 - AI Investment for Future Technology	
		Moderator: Jane Wu, BRI, USA	
		Enqiang Wang, Founding Partner, TianDi Fund	
		Panelists	Bing Fu Wang, Director, 2012 Telecom Lab
			Jeff Lin is a Partner at iGlobe Partners
		Dr. Deji Chen, Fellow of the International Society of Automation (ISA) and National High-Level Overseas Talent	
06:00pm – 06:30pm		Large Group Photo	
06:30pm – 08:30pm		Certificate and VIP Dinner	
IEEE FTS 2024 Concurrent Session at School of Electronics, Information and Electrical Engineering 3-100 (EIEE 3-100)			
	Location	电子信息与电气工程学院 3号楼-100	
Schedule Time	Building and Room	Program Session Information	
02:00pm – 03:00pm	EIEE 3-100	FTS Session #6 - Environment, ESG, and Sustainability	
		Session Chair: Daniel ZHU	
02:00pm – 02:20pm		Topic: Ethical AI from Biodiversity Perspective	
		Speaker: Jin Feng ZHOU, Secretary-General	
		China Biodiversity Conservation and Green Development Foundation	
02:20pm – 02:40pm		Topic: Green Design, AI, and Sustainability	
		Speaker: Xing LEI, Director-General of the World Green Design Organization	
		Chairman of Beijing Dragon Design Foundation	
02:30pm – 03:00pm		Topic: AI in Transition towards Silicon Life	
		Speaker: Daniel ZHU, Mentor, x-lab, Qinghua University	
03:00pm – 03:30pm		Tea Break	
03:30pm – 04:30pm	EIEE 3-100	FTS Plenary #2 - Smart Machine in Traditional Chinese Medicine	
		Moderator: JingJing Xu, Co-Funder of Beijing Smart Healthcare Association, China	
03:30pm – 03:50pm		Topic: Smart Machine in Traditional Chinese Medicine	
		Speaker: John Yu, Co-founder/CEO of Beijing Smart Health Technologies Co.	
04:00pm – 04:30pm	Panel Discussion	Chief AI Think Tank Officer	
	Panelists	Weimin Xu, Founder and Chairman of Shanghai Minkun Health Services Group	
		Deming Hao, Secretary General, Association of Chinese Privately Owned Medical Institutions	
04:30pm – 05:00pm	EIEE 3-100	FTS Session #7 - Responsible AI: Building Trust and Ethics in the Age of AI	
		Session Chair: Xiaotain Xu, IBM, China	
		Topic: Responsible AI: Building Trust and Ethics in the Age of AI	
		Speaker: Fanjing Meng, IBM, China	
06:00pm – 06:30pm		Large Group Photo	
06:00pm – 8:30pm		Certificate and VIP Dinner	

Venue



Venue: 600 Dongchuan Rd., Minhang District, Shanghai Jiao Tong University, Shanghai 200240, China.

The conference venue is situated at the Minhang campus of Shanghai Jiao Tong University in Shanghai, China. The conference rooms are situated in various locations across the campus, as illustrated in the map below. If you'd like to explore the campus further, feel free to use the following 2D (<https://en.sjtu.edu.cn/assets/815/minhang-map.gif>) and the 3D map (<https://map.sjtu.edu.cn/>).



Routes

There are several routes to reach our venue, with the following being the most commonly used.

From: Shanghai Hongqiao International Airport / Railway Station

Option 1: Subway:

Line 2 (Hongqiao Terminal 2 Station / Hongqiao Railway Station). Take exit 4 of LouGuanshan Road in the direction of Pudong International Airport. Transfer to Line 15 Lou Guanshan Road to the station and take the train of Zizhu High-tech Zone from Exit 6 of Zizhu High-tech Zone to 600 Dongchuan Road, Shanghai Jiao Tong University.

Option 2: Taxi:

24 km, takes around 28 minutes.

From: Shanghai Pudong International Airport

Option 1: Subway:

Line 2 Pudong International Airport Take train —— Century Avenue Station —— Transfer to the same station Line 9 in the direction of Songjiang South Station —— Guilin Road Get off —— Transfer to Line 15 Zizhu High-tech Zone Station —— Zizhu High-tech Zone Station exit at Gate 6, Gate 600, Dongchuan Road, Shanghai Jiao Tong University.

Option 2: Taxi:

50.8 km, takes around 1 hour.

From: Shanghai Railway Station

Option 1: Subway:

Line 1 Shanghai Railway Station Take the Xin Zhuang direction train —— Shanghai South Railway Station —— Transfer to Line 15 Zizhu High-tech Zone Station —— Exit 6, go to Gate 600, Dongchuan Road, Shanghai Jiao Tong University

Option 2: Taxi:

33.7 km, takes around 1 hour and 35 minutes.

Organization Committees:



IEEE
COMPUTER
SOCIETY



浙江大学 上海高等研究院
SHANGHAI INSTITUTE FOR ADVANCED STUDY
ZHEJIANG UNIVERSITY



2024 IEEE FTS Organizing Committee
Executive Organization: Pacific View Media

Date: July 15-18, 2024

Venue Information:

600 Dongchuan Rd., Minhang District, Shanghai Jiao Tong University, Shanghai 200240, China.

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Website



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