



IEEE CISOSE and IEEE Future Technology Provisional Schedule

(IEEE JCC, IEEE BDS, IEEE DAPPS, IEEE JCC, IEEE SOSE, IEEE AiTest, IEEE Future Technology)

Welcome to the IEEE Congress on Intelligent Service-Oriented Systems Engineering! The event is being held at the Hilton Doubletree Newark-Fremont hotel, in Fremont California on August 15-18 2022, and is integrated into the IEEE Future Technology Summit. The congress is held in parallel with **IEEE JCC, IEEE BDS, IEEE DAPPS, IEEE JCC, IEEE SOSE, IEEE AiTest.**

This is a draft document that shows detailed keynote information and a provisional schedule for all events taking place between August 15-18 2022 inclusive. A final schedule and program will be available online in the week before the congress begins – we do not envision any major changes to the schedule at this point.

In this document:

- 1) Keynote information
- 2) High-level congress schedule
- 3) Detailed daily schedule

CISOSE 2022 Keynote Information



KEYNOTE: Mark Harman

Research Scientist - Meta

Talk title: Simulation-based Testing

Talk abstract: This talk will cover Simulation-based testing, drawing on experience on the development and deployment of client- and server-side testing platforms at Meta (formerly Facebook). The talk will review client-side testing using Sapienz, an automated test generation tool for Android and iOS, and server-side testing using the cyber-cyber digital twin WW. These technologies are in daily use at Meta platforms to test the back end systems, infrastructure and apps that enable meta to provide software such as Facebook, Instagram and WhatsApp; some of the mostly widely used systems in the history of Software Engineering.

Brief biography: Mark Harman is a full-time Software Engineer at Meta Platforms, working in the Simulation-Based Testing team. The team has developed and deployed both the Sapienz and WW platforms for client- and server- side testing. Simulation-based testing is helping to tackle challenging technical problems in software reliability, performance, safety and privacy. These simulation-based testing technologies have been deployed to test systems of over 100 million lines of lines of code, daily relied upon by over 2.9 billion people for communications, business, social media and community building. Sapienz grew out of Majicke (a start up Mark co-founded) that was acquired by Facebook (now Meta Platforms) in 2017. Prior to working at Facebook, Mark was Head of Software Engineering at UCL and Director of its CREST centre, where he remains a part time professor. In his more purely scientific work, he co-founded the field Search Based Software Engineering (SBSE) in 2001, now the subject of active research in over 40 countries worldwide. He received the IEEE Harlan Mills Award and the ACM Outstanding Research Award in 2019 for his work, and was awarded a fellowship of the Royal Academy of Engineering in 2020.

CISOSE 2022 Keynote Information



KEYNOTE: Heiko Ludwig

Senior Manager, AI Platforms - IBM Research

Talk title: Learning-as-a-Service: Data and learning as part of a learning and evolving service-oriented system

Talk abstract: Machine learning has become an important component of applications and continuous learning enables us to adapt the behavior of a system throughout its life-cycle. However, in distributed and service-oriented systems, data privacy often becomes an issue if services and associated data are owned by different organizational entities and combining data in one location infringes on privacy regulation. Federated learning enables us to train a machine learning model in a distributed way such that a common model can be trained while data stays with their respective owners. In this way, learning services collocated with data can complement an SOA architecture and help a SOA solution incorporate model adaptation throughout its life cycle.

Brief biography: Heiko Ludwig is a Principal Research Scientist and Senior Manager of the AI Platforms department in IBM's Almaden Research Center in San Jose, CA. Heiko is leading research work on computational platforms for AI, focusing security, privacy, performance and resilience. The results of this work contribute to various IBM lines of business and open source projects. Heiko is currently leading the initiative on federated machine learning initiative at IBM Research and Distributed AI. Heiko has more than 100 peer-reviewed publications with more than 8000 citations and more than 50 patents and patent applications, Heiko was recognized for his work in different ways, e.g., as an ACM Distinguished Engineer. Prior to the Almaden Research Center, Heiko held different positions at IBM Research labs. He holds a Master's degree and a PhD in information systems from Otto-Friedrich University Bamberg, Germany.

CISOSE 2022 Keynote Information



KEYNOTE: Janet George

Corporate VP and general manager: Cloud and Enterprise Solutions Group - Intel

Talk title: Autonomous Enterprises driven by AI and ML

Talk abstract: What is an Autonomous Enterprise? An Autonomous Enterprise is an enterprise that is prepared to tap into the power of ML and AI. In other words these enterprises are AI ready and they are powered by AI. They know how to win using AI technologies. In the age of AI which has become an existential threat for enterprises, winning with AI has become a necessity. Delayed adoption increases the risk of the enterprises being left behind their competition and the Industry at large, conceding to business erosion and a slow painful long drawn out eventual acquisition or potential death. Like every major epoch, the Internet age, the social media age, the big data age and the AI age, these genetic markers bring profound technological advances and major seismic shifts in the operational aspects of the business. In this talk we will explore how pioneers combine investment choices, strategy, organizational behaviors, and technological adoption as essential ingredients for winning with AI.

Brief biography: Janet is currently serving as CVP and GM (Senior Executive) of Cloud and Enterprise, Strategic Customer group in Data center and Artificial Intelligence Business Unit in Intel corporation. In this role she is responsible for leading and driving co-engineering, co-innovation and co-creation of new software revenue streams to drive intel affinity with top cloud, enterprise and strategic customers. Prior to Intel she was serving as GVP of Autonomous Enterprise for Oracle driving Autonomous Enterprise transformation, solving for business outcomes with Advanced Analytics, Machine Learning, and conversational Artificial Intelligence. Including deep neural networks and Cognitive Automation for key customers. She is deeply engaged with Stanford University and UC Berkeley CA to advance the frontiers of mind, brain, computation and technology, cross disciplinary innovations in the intersection of Computer Science and Neuroscience. She is also associated with engagements at USC Gould School of Law for new copyright and IP patent laws in the field of Artificial Intelligence and innovations with Generative Adversarial neural networks.

CISOSE 2022 Keynote Information



KEYNOTE: Stefan Tai

Professor and Head of Chair Information Systems Engineering - TU Berlin

Talk title: If Sokrates only knew... Enhancing Privacy in dApps through Zero-Knowledge Proofs

Talk abstract: Zero-knowledge proofs (ZKPs) and zk-SNARKS in particular have been receiving increased interest in the blockchain community and beyond, mostly for reasons of both improving scalability and enhancing privacy in decentralized applications. Higher-level languages and tooling like ZoKrates make creating verifiable off-chain programs and linking them to smart contracts possible even for the non-crypto-expert, hiding some of the complexities associated with programming ZKPs. First-of-a-kind applications demonstrate the enormous power and benefits when combining blockchains and ZKPs, but many more applications are still to be developed and learned from. We call to focus attention on practical applications of ZKPs and invite everyone interested to participate in a new validation initiative aimed at identifying general guidelines and best practices for using ZKPs. With ZKPs, the possibilities of dApps both in what they can do and what qualities they can ensure in hybrid on-/off-chain environments will be significantly enhanced.

Brief biography: Stefan Tai is Professor and Head of Chair Information Systems Engineering at TU Berlin, Faculty of Computer Science. Stefan has over 25 years of experience in cutting-edge IT research and development, having led and been involved in numerous, both industrial and scientific projects in the US, in Europe, and in Germany. His research interests center around creating quality-driven enterprise software systems, especially cloud- and blockchain-based systems.

CISOSE 2022 Keynote Information



KEYNOTE: Karl-Erik Årzén

Professor, Department of Automatic Control - Lund University

Talk title: Modeling, Control and Learning for Improved Cloud Predictability

Talk abstract: It is still not commonplace to deploy mission and time-critical applications, e.g., control applications in the cloud. There are several reasons for this, e.g., too long and too varying delays, connectivity issues, the lack of guarantees, and cyber-security issues. There are two complementary research directions to help overcome parts of this. The first is to make the control applications more resilient towards the temporal non-determinism caused by the cloud, and the second is to make the cloud more temporally predictable by developing real-time support for the involved system components, e.g. OS, networks, hypervisors, etc. and for the associated resource management and orchestration methods. One approach towards the latter is to use feedback-based resource management, i.e., control of the cloud. The first part of this keynote focuses on how to make control applications, closed over the cloud, more resilient. The second part investigates different feedback-based methods for resource management. The work presented has been done as a part of WASP - the Wallenberg AI, Autonomous Systems and Software Program - the single largest research grant within Engineering Sciences in Sweden ever with a total budget of \$600 Million.

Brief biography: Prof. Karl-Erik Årzén received his M.Sc. in Electrical Engineering and Ph.D. in Automatic Control from Lund University in 1981 and 1987, respectively. He worked for ABB Corporate Research during 1992-1994, and was appointed Full Professor in Automatic Control in 2000. His research interests include cyber-physical systems, real-time systems, real-time and embedded control, control of computer systems, and cloud control. He is co-director of WASP - the Wallenberg AI, Autonomous Systems and Software Program.

CONGRESS + FUTURE TECH HIGH LEVEL SCHEDULE *(times not fully accurate – see next pages for detailed times)*

	Monday	Tuesday	Wednesday	Thursday
(PDT)	Aug-15	Aug-16	Aug-17	Aug-18
07:00 - 07:30	FREE BUFFET BREAKFAST	FREE BUFFET BREAKFAST	FREE BUFFET BREAKFAST	
07:30 - 08:00				
08:00 - 08:30	CISOSE OPENING SESSION	FUTURE TECH OPENING	DAPPS ONLINE, SOSE 4 BDS 4, JCC ONLINE 3 (7:30)	JCC ONLINE 4 (8:00) BDS WORKSHOP 1 (8:30) BDS POSTER SESSION 1
08:30 - 09:00				
09:00 - 09:30	KEYNOTE 1: MARK HARMAN META RESEARCH (8:50)	Sustainable Smart Cities for the Future	KEYNOTE 3: JANET GEORGE, INTEL	
09:30 - 10:00				
10:00 - 10:30	COFFEE BREAK (9:50 to 10:10)		COFFEE BREAK	COFFEE BREAK
10:30 - 11:00	SOSE 1, BDS 1 AiTest 1, SOSE INVITE 1 (til 11:40)	COFFEE BREAK	BDS 5, DAPPS 1 AiTest 4, SOSE INVITE 3	BDS WORKSHOP 2 BDS POSTER SESSION 2
11:00 - 11:30		Future Green energy and Technology and Future AI and ML		
11:30 - 12:00				
12:00 - 12:30	FREE CHINESE BUFFET LUNCH (11:40 - 13:00)	FREE HOTEL LUNCH	FREE HOTEL BOX LUNCH	
12:30 - 13:00				
13:00 - 13:30	KEYNOTE 2: HEIKO LUDWIG, IBM	Future Bigdata Smart Cities and Future Smart Cloud Computing and Applications	KEYNOTE 4: STEFAN TAI, TU BERLIN	
13:30 - 14:00				
14:00 - 14:30	NETWORKING BREAK		NETWORKING BREAK	
14:30 - 15:00	SOSE 2, BDS 2 AiTest 2, SOSE INVITE 2	Future Green Energy and Technology Panel + Future Cloud Computing	KEYNOTE 5: KARL-ERIK ARZEN LUND UNIVERSITY	
15:00 - 15:30				
15:30 - 16:00				
16:00 - 16:30	COFFEE BREAK	NETWORKING BREAK	COFFEE BREAK	
16:30 - 17:00	SOSE 3, BDS 3 AiTest 3, JCC ONLINE 1	When Computing Meets Sustainability Panel	MOB1 (4:30-6:30) DAPPS 2, BDS 6, SOSE INVITE 4	
17:00 - 17:30				
17:30 - 18:00		Future Digital Currency and Economy	WASP POSTERS	
18:00 - 18:30				
18:30 - 19:00	JCC ONLINE 2 AiTest ONLINE 1			
19:00 - 19:30				
19:30 - 20:00		RECEPTION 6:30-9PM	BANQUET + Award presentations 7-11PM	

DAILY SCHEDULE: Monday 15th August - CISOSE

	JCC	AiTest	DAPPS	SOSE	BDS
(PDT)	Grand Ballroom 1A	Grand Ballroom 1B	Grand Ballroom 1C	Grand Ballroom 2	Grand Ballroom 3
07:00 - 08:00	FREE BUFFET BREAKFAST				
08:00 - 08:50	CISOSE OPENING				
8:50 - 9:50	KEYNOTE 1: MARK HARMAN, META RESEARCH - "Simulation-based Testing"				
9:50 - 10:10	COFFEE BREAK				
10:10 - 11:40		<p>AiTest 1: AI test applications and measurement Chair: H. Zhu</p> <p>"A Passive Testing Approach using a Semi-Supervised Intrusion Detection Model for SCADA Network Traffic" - H. Mühlburger, F. Wotawa</p> <p>"Metrics for Measuring Error Extents of Machine Learning Classifiers" - H. Zhu, I. Bayley, M. Green</p> <p>"Original Music Generation using Recurrent Neural Networks with Self-Attention" - A. Jagannathan, B. Chandrasekaran, S. Dutta, U. Patil, M. Eirinaki</p>	<p>CISOSE Invited 1: Testing and Quality Assurance Chair: Jerry Gao</p> <p>"Adequate Testing Unmanned Autonomous Vehicle Systems - Infrastructures, Approaches, Issues, Challenges, and Needs" - J. Gao, W. Wu, O-E-K. Aktouf</p> <p>"The Effects of Random Undersampling for Big Data Medicare Fraud Detection", J. Hancock, T. Khoshgoftaar, J. Johnson</p>	<p>SOSE 1: Microservices: Architectures and Analysis (100 Minutes)</p> <p>"Serverless: From Bad Practices to Good Solutions" - D. Taibi, B. Kehoe, D. Poccia</p> <p>"Cargo-Cult Containerization: A Critical View of Containers in Modern Software Development" - T. Mikkonen, C. Pautasso, K. Systä, A. Taivalsaari</p> <p>"Microservice Migration based on Analysis of Database Access Requests", S-P. Ma, T-W. Lu, C-C Li</p> <p>"Microservice Architecture Reconstruction and Visualization Techniques: A Review" - T. Cerny, A, Elsayed, V. Bushong, A. Al Maruf, D. Taibi</p>	<p>BDS 1: Big Data for Healthcare and Social Networks 1 - ONLINE Chair: Iraklis Varlamis</p> <p>"Spike2Signal: Classifying Coronavirus Spike Sequences with Deep Learning", S. Ali, T. Murad, P. Chourasia, M. Patterson</p> <p>"A Domain Generalization Approach for Out-Of-Distribution 12-lead ECG Classification with Convolutional Neural Networks", A. Ballas, C. Diou (SHORT)</p> <p>"SoBigDemicSys: A Social Media based Monitoring System for Emerging Pandemics with Big Data", T. Tran, X-S Vu, L. Jiang (SHORT)</p>

					"Assessing the Impact of Movie Plot Summaries on Box Office Sales", A. Pocol, L. Istead (SHORT)
11:40 - 13:00	FREE CHINESE BUFFET LUNCH				
13:00 - 14:00	KEYNOTE 2: HEIKO LUDWIG, IBM - "Learning-as-a-Service: Data and learning as part of a learning and evolving service-oriented system"				
14:00 - 14:30	NETWORKING BREAK				
14:30 - 16:00		<p>AI Test 2: AI Test Generation Chair: M. Ahmed</p> <p>"Anomalous Anomaly Detection" - M. Ahmed, I. Neamtii</p> <p>"Generating Critical Driving Scenarios from Accident Sketches" - A. Gambi, V. Nguyen, J. Ahmed, G. Fraser</p> <p>"DeltaExplainer: A Software Debugging Approach to Generating Counterfactual Explanations" - S. Shree, J. Chandrasekaran, Y. Lei, R. Kacker, D. Kuhn</p>	<p>CISOSE Invited 2: Safety, Security and Trustworthiness</p> <p>"The future of safe BVLOS drone operations with respect to system and service engineering" - E. Politi, I. Varlamis, K. Tserpes, M. Larsen, G. Dimitrakopoulos</p> <p>"TrustlessNAS: Towards Trustless Network Architecture Search" - L. Bathen, D. Jadav</p>	<p>SOSE 2: Microservices: Visualization and Dynamics</p> <p>"Using Microservice Telemetry Data for System Dynamic Analysis" - A. Al Maruf, A. Bakhtin, T. Cerny, D. Taibi (ZOOM)</p> <p>"Impact of API Rate Limit on Reliability of Microservices-Based Architectures" - A. El Malki, U. Zdun, C. Pautasso</p> <p>"Microvision: Static analysis-based approach to visualizing microservices in augmented reality" - T. Cerny, A. Elsayed, V. Bushong, A. Al Maruf, D. Taibi</p>	<p>BDS 2: Big Data Services and Applications</p> <p>Chair: Monica Vitali</p> <p>"Real-Time Detection of Mobile Objects on Roads for Autonomous Vehicles Using Deep Learning", M. Ng, D. Jagetiya, X. Gao, H. Shi, J. Gao, J. Liu</p> <p>"A novel method for enhancing the accuracy of box detection under noise effect of tags and complex arrangement of pile with Cycle-GAN and Mask-RCNN", T.. Nguyen, H. Kim, J. Yoon, J. Han (SHORT)</p> <p>"On Building Real Time Intelligent Agricultural Commodity Trading Models", J. Gao, J. Zhou, J. Ye, Y. Ouyang, M. Tong (SHORT)</p> <p>"A Non-Bottleneck Residual</p>

					Approach for QR Code Printed Source Identification", M-J Tsai (RMSPP WORKSHOP)
16:00 - 16:30	COFFEE BREAK				
16:30 - 18:00	<p>JCC ONLINE 1: Schedulers and Security for JointCloud</p> <p>Chair: Monowar Bhuyan</p> <p>"MRASS: Dynamic Task Scheduling enabled High Multi-cluster Resource Availability in JointCloud", F. Gao, H. Wang, P. Shi, X. Fu, T. Zhong, J. Kong</p> <p>"ProxyDWRR: A Dynamic Load Balancing Approach for Heterogeneous-CPU Kubernetes Clusters", Q. Wang, Y. Ren, S. Yang, J. Guan, B. Li, J. Zhang, Y. Tan</p> <p>"Towards A Secure Joint Cloud With Confidential Computing", X. Zhao, M. Li, E. Feng, Y. Xia</p>	<p>AI Test 3: New Approaches for AI Test</p> <p>Chair: Jerry Gao</p> <p>"Construction of Semantic Model for GUI of Mobile Applications Using Deep Learning" - Q. Liu, T. Zhang, S. Liu, J. Gao, J. Cheng</p> <p>"An Approach For Verifying And Validating Clustering Based Anomaly Detection Systems Using Metamorphic Testing" - F. Ur Rehman, C. Izurieta</p> <p>"An Approach to GUI Test Scenario Generation Using Machine Learning" - J. Gao, T. Chuanqi, H. Yejun, A. Anumalasetty, E. Joseph, A. Sripathi, N. Himabindu</p>	<p>CISOSE Invite 3: Cloud of Things</p> <p>Chair: Paul Townend</p> <p>"Chameleon Browser for Public Device Operation", T. Kobayashi, J. Tan, F. Kimura, K. Fukae</p> <p>"Robot Cloud Computing and AI Services - State-of-the-art Solutions, Challenges, and Needs", J. Gao, D. Wang</p>	<p>SOSE 3: Cloud Computing: Architectures and Network (60 Minutes)</p> <p>"API Description-Based Conformance Assessment of Architectural Design Decision" - A. Singjai and U. Zdun</p> <p>"A Cloud Native Management and Orchestration Framework for 5G End-to-End Network Slicing" - Y-S. Chiu, L-H. Yen, T-H. Wang, C-C. Tseng</p>	<p>BDS 3: Big Data Analytics and Machine Learning 1</p> <p>Chair: Magdalini</p> <p>"Active Learning for Node Classification using a Convex Optimization approach", D. Agarwal, B. Natarajan</p> <p>"SMARTREC - A SMART Conversational Recommendation System using Semantic Knowledge Graphs", S. Vijayakumar, J. Jetcheva</p> <p>"Distribution Grid Topology Estimation: A New Approach-based on Bayesian Network Models", A. Mabrouk, R. Rajagopal</p>

18:00 - 19:30	<p>JCC ONLINE 2: ML based resource management and performance optimization</p> <p>Chair: Tianyu Wo</p> <p>"Resource Usage Prediction Based on BiLSTM-GRU Combination Model", X. Li, H. Wang, P. Xiu, X. Zhou, F. Meng</p> <p>"A Query-Level Distributed Database Tuning System with Machine Learning", X. Fang, Y. Zou, Y. Fang, Z. Tang, H. Li, W. Wang</p> <p>"Uncertainty Estimation based Intrinsic Reward For Efficient Reinforcement Learning", C. Chen, T. Wan, K. Xu, B. Ding, Z. Gao, D. Feng</p>	<p>AiTest ONLINE: AI Test Quality</p> <p>Chair: C. Tao</p> <p>"ML4ML: Automated Invariance Testing for Machine Learning Models" -Z. Liao, P. Zhang, M. Chen</p> <p>"MBET: Resilience Improvement Method for DNNs" - A. Buldu, A. Sen, K. Swaminathan, B. Kahne</p> <p>"A Review of Quality Assurance Research of Dialogue Systems" - X. Li, C. Tao, J. Gao, H. Guo</p>			
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DAILY SCHEDULE: Tuesday 16th August – IEEE FUTURE TECHNOLOGY SUMMIT

(PDT)	Grand Ballroom 1 & 2	Grand Ballroom 3 (ONLINE SESSIONS)
07:00 - 08:30	FREE BUFFET BREAKFAST	
08:30 - 08:40	FUTURE TECH OPENING - Bob Lim, VP-IT & CIO, San Jose State University	
08:40 - 08:55	FUTURE TECH WELCOME REMARKS - Lily Mei, Mayor of the City of Fremont, California, USA	
08:55 - 09:00	OVERVIEW OF SUMMIT PROGRAM	
09:00 - 10:30	<p>Track: Sustainable Smart Cities for the Future Moderator: Guido Wirtz, University of Bamberg, Germany</p> <p>"Sustainable Smart City for Future Project Experience and Lessons" - Hong-Yuan Lee, Professor, Engineering in the Department of Civil Engineering at National Taiwan University</p> <p>"Measuring Economy from Space", Sudeep Sarkar - Ph.D., Distinguished University Professor and Chair, Computer Science and Engineering, Co-Director, USF Institute for AI+X</p>	
10:30 - 10:45	COFFEE BREAK	
10:45 - 12:15	<p>Track: Future Green Energy and Technology Moderator: Dr. Qin Wang, Scientist, Engineer, Electric Power Research Institute</p> <p>"Path to Zero Emission Community", Jane Wu - Managing Director, BRI Capital Partners, BRI Energy</p> <p>"Forever Energy Solar and EV Changing System", Chauncey Sun - CPO, Forever Energy</p>	<p>Topic: Future AI and Machine Learning (ONLINE) Moderator: Hong Zhu</p> <p>"The Use of Artificial Intelligence to Write Applications and Manage Cloud and IoT Infrastructure", Vincenzo Piuri - IEEE Board of Directors and President of the IEEE Systems Council, IEEE Fellow and ACM Distinguished Scientist, University of Milan, Italy</p> <p>"Imbalanced Big Data and Machine Learning Challenges", Taghi M. Khoshgoftaar - Ph.D., Chair Professor, Department of Electrical Engineering and Computer Science, Florida Atlantic University</p>

12:15 - 13:30	FREE HOTEL BUFFET LUNCH	
13:30 - 15:00	<p>Track: Future Bigdata Smart Cities Moderator: Subhankar Dhar, Professor, School of Information Systems and Technology, San José State University</p> <p>"Opportunities and challenges in applying AI in identity and threat management", Sagnik Nandy - CTO & President of Technology, Okta</p> <p>"Data processing Units (DPUs) will be Key to Building Next-Generation Data Centers", Jai Menon - Chief Scientist, Fungible, Inc.</p>	<p>Track: Future Smart Cloud Computing and Applications (ONLINE) Moderator: Paul Townend</p> <p>"Acceleration of Training Deep Neural Networks (DNNs) through Fine-Grained GPU Scheduling", Jie Xu - Professor, Chair of Computing, University of Leeds, Director of the UK White Rose Grid e-Science Centre</p>
15:00 - 15:30	COFFEE BREAK	
15:30 - 17:30	<p>Track: Future Green Energy and Technology (15:30 - 17:00) Moderator: Jane Wu, Managing Director, BRI Capital Partners, BRI Energy</p> <p>Panel Discussion: Future Infrastructure with Cloud</p> <p>Panelists: 1. Jerry Gao, Professor Research Center Director of Smart Technology for Complex Systems, SJSU 2. Qin Wang, Scientist Engineer, Electric Power Research Institute 3. Chauncey Sun & Craig Jones, Forever Energy</p>	<p>Track: Future Cloud Computing Moderator: Hiroyuki Sato, University of Tokyo</p> <p>Panel 1: Future Infrastructure with Cloud (15:20 - 16:20) Panelists: 1. Ippei Shake, Director, NTT Smart data science Center 2. Rene Buch, CTO, European Open Science Cloud (EOSC) Association AISBL 3. Johan Eker, Dr, Ericsson Research</p>
		<p>SHORT BREAK (16:20 - 16:30)</p>
		<p>Panel 2: When Computing Meets Sustainability: Opportunities and Challenges (16:30 - 17:30) Moderator: Fanjing Men - CTO, IBM China Systems Lab, China</p> <p>Panelists: 1. Rajkumar Buyya, University of Melbourne, Australia 2. Tamar Eilam, IBM Research, USA 3. Shuguang Qi, MIIT, China 4. Chao Li, Shanghai Jiao Tong University (SJTU), China</p>
17:30 - 17:35	SHORT BREAK	
17:35 - 18:30		<p>Track: Future Digital Currency and Economy Moderator: Jerry Gao and Gloria Ye</p>

		"Digital Economy: Digital Currencies, Arts, and Brands" Wei-Tek Tsai Ph.D., Professor, Digital Society&Blockchain Laboratory Director, Beihang University
18:30 - 18:45	GROUP PHOTO	
18:45 - 20:30	FREE RECEPTION AND DINNER	
20:30 - 21:30	CISOSE 2023 PLANNING MEETING	

DAILY SCHEDULE: Wednesday 17th August – IEEE CISOSE

	JCC	AiTest	DAPPS	SOSE	BDS
(PDT)	Grand Ballroom 1A	Grand Ballroom 1B	Grand Ballroom 1C	Grand Ballroom 2	Grand Ballroom 3
07:00 - 08:00	FREE BUFFET BREAKFAST				
08:00 - 09:00	<p>JCC ONLINE 3 (7:30 - 09:00): Cache, stream computing, and algorithms for cloud systems</p> <p>"MicroStream: A Distributed In-memory Caching Service For Data Production", M. Zhang, Y. Gao, C. He, T. Tan</p> <p>"Two-stage Scheduling of Stream Computing for Industrial Cloud-edge Collaboration", T. Wang, X. Mou, J. Hu, R. Wang, T. Wo</p> <p>"Threshold Based Load Balancing Algorithm in Cloud Computing", S. Chowdhury, A. Katangur</p>	<p>CISOSE INVITE 4: Creative Computing</p> <p>"Computerising Connections between Creativity and Aesthetics", H. Yang, Z. Lu</p>	<p>DAPPS ONLINE 1 Chair: B. Liu (provisional)</p> <p>"Being Accountable Never Cheats: An Incentive Protocol for DeFi Oracles", B. Liu, J. Zhou, Y. Zhi Lim</p> <p>"Blade: A Blockchain-supported Architecture for Decentralized Services", S. Göndör, H. Yildiz, M. Westerkamp, A. Küpper</p> <p>"Game-theoretic Designs for Blockchain-based IoT: Taxonomy and Research Directions", F. Erfan, M. Bellaiche, T. Halabi</p>	<p>SOSE 4: Cloud Computing: Serverless and Transformation</p> <p>"Automatic Test Case Generation for Serverless Applications", S. Winzinger, G. Wirtz</p> <p>"Monolith to Microservices: VAE-Based GNN Approach with Duplication Consideration", K. Sooksatra, R. Maharjan, T. Cerny</p>	<p>BDS 4: Big Data Analytics and Machine Learning 2 (ONLINE)</p> <p>"Reversible data hiding scheme based on image partitioning and histogram shifting", J. Hao, P. Ping, X. Peng, Z-Y Gao</p> <p>"Allocating Resource Capacities for an Offload-enabled Mobile Edge Cloud System", Z. Chen, L. He</p>
09:00 - 10:00	KEYNOTE 3: JANET GEORGE, Intel – "Autonomous Enterprises driven by AI and ML"				
10:00 - 10:30	COFFEE BREAK				

10:30 - 12:00		<p>AiTest 4: Test Selection and Prioritization for AI Test</p> <p>Chair: Hong Zhu</p> <p>"Supervised Learning for Coverage-Directed Test Selection in Simulation-Based Verification", N. Masamba, K. Eder, T. Blackmore</p> <p>"Hybrid Intelligent Testing in Simulation-Based Verification", N. Masamba, K. Eder, T. Blackmore</p> <p>"DeepAbstraction: 2-Level Prioritization for Unlabeled Test Inputs in Deep Neural Networks", H. Al-Qadasi, C. Wu, Y. Falcone</p>	<p>DAPPS 1</p> <p>Chair: Kaiwen Zhang</p> <p>"The DecCert PKI: A Solution to Decentralized Identity Attestation and Zooko's Triangle", S. Markelon, J. True</p> <p>"Modeling and Enforcing Access Control Policies for Smart Contracts", J-P. Töberg, J. Schiffli, F. Reiche, B. Beckert, R. Heinrich, R. Reussner</p> <p>"Performance Analysis of Hyperledger Besu in Private Blockchain", C. Fan, C. Lin, H. Khazaei, P. Musilek</p>	<p>CISOSE INVITE 5: Intelligent Systems</p> <p>"The Promising Role of Representation Learning for Distributed Computing Continuum Systems", P. Donta, S. Dustdar</p> <p>"EaaS: A Service-Oriented Edge Computing Framework Towards Distributed Intelligence", M. Zhang, J. Cao, Y. Sahni, Q. Chen, S. Jiang, T. Wu</p>	<p>BDS 5: Big Data for Healthcare and Social Networks 2</p> <p>"An Artificial Intelligence Outlook for Colorectal Cancer Screening", P. Katrakazas, A. Ballas, M. Anisetti, I. Spais</p> <p>"Integrating imaging and sequencing to compute the subcellular organization of cell transcriptomes", N. Andor (SHORT)</p> <p>"Small data deep learning for lung cancer detection in CT", K. Suzuki (SHORT)</p> <p>"A parallel community detection algorithm based on spanning trees", P. Potikas, D. Souliou, A. Pagourtzis, K. Potika (SHORT)</p>
12:00 - 13:00	FREE HOTEL BOX LUNCH				
13:00 - 14:00	KEYNOTE 4: STEFAN TAI, TU Berlin – " If Sokrates only knew... Enhancing Privacy in dApps through Zero-Knowledge Proofs"				
14:00 - 14:30	NETWORKING BREAK				
14:30 - 15:30	KEYNOTE 5: KARL-ERIK AZREN, Lund University – " Modeling, Control and Learning for Improved Cloud Predictability"				
15:30 - 16:00	COFFEE BREAK				

16:00 - 17:30	<p>MobileCloud 1 Chair: Sato</p> <p>"A Mobile Cloud-based Access Control with Efficiently Outsourced Decryption", P. Sanchol, S. Fugkeaw, H. Sato</p> <p>"Adaptive Acceleration of Inference Services at the Network Edge", C. Mofjeld, Y. Peng, H. Qin</p> <p>"End-to-End Latency Optimization of Multi-view 3D Reconstruction for Disaster Response", X. Zhang, M. Li, A. Hilton, A. Pal, S. Dey, S. Debroy</p> <p>"An Explainable Deep Neural Framework for Trustworthy Network Intrusion Detection", S. Roy, J. Li, V. Pandey, Y. Bai</p>		<p>DAPPS 2 (SHORT PAPER SESSION)</p> <p>Chair: Kaiwen Zhang</p> <p>"Can We Effectively Use Smart Contracts to Stipulate Time Constraints?", T. Eichinger, M. Ebermann</p> <p>"Gromit Macro-Benchmark: Stress Testing Blockchain Systems for Fun and Science", B. Nasrulin, M. De Vos, G. Ishmaev, J. Pouwelse</p> <p>"Managing Collaborative Tasks within Heterogeneous Robotic Swarms using Swarm Contracts", S. Mallikarachchi, C. Dai, O. Seneviratne, I. Godage</p>	<p>CISOSE INVITE 6: New Directions of Service Orientation</p> <p>"Service Mesh and eBPF-Powered Microservices: A Survey and Future Directions", M. R. Sedghpour, P. Townend</p> <p>"A Conceptual Model Supporting Systematic Design of Service Governance Systems", Z. Wang, H. Shi, X. He, H. Xu</p>	<p>BDS 6: Big Data for Resource Prediction and Applications</p> <p>"HealthLies: Dataset and Machine Learning Models for Detecting Fake Health News", G. Chaphekar, J. Jetcheva</p> <p>"A big data approach for Fuel Oil Consumption estimation in the maritime industry", D. Kaklis, P. Eirinakis, G. Giannakopoulos, T. Varelas, C. Spyropoulos, I. Varlamis</p> <p>"Streamflow Prediction Using a Hybrid Methodology Based on Convolutional Neural Network and Long Short-Term Memory", J. F. Ramirez Rochac, N. Zhang, T. Deksissa, W. H. Mahmoud (POSTER)</p> <p>"MAP: Design, Development, Deployment, and Maintenance of Industrie 4.0 AI Applications", A. Dagnino, M. Kolomycki, A. Kucheria (AIML WORKSHOP)</p>
17:30 - 18:30	WASP POSTER SESSION				
19:00 – 21:30	CONFERENCE BANQUET				

DAILY SCHEDULE: Thursday 18th August – IEEE CISOSE

	JCC	AiTest	DAPPS	SOSE	BDS
San Jose (PDT)	Grand Ballroom 1A	Grand Ballroom 1B	Grand Ballroom 1C	Grand Ballroom 2	Grand Ballroom 3
08:30 - 10:00	<p>JCC ONLINE 4 (08:00) : Scalability for cloud-based microservices, blockchain, and ML systems</p> <p>Chair: Tianyu Wo</p> <p>"An Automatic Scaling System for Online Application with Microservices Architecture", Y. Song, C. Li, K. Zhuang, T. Wo</p> <p>"FSS: A Flexible Scaling Scheme for Blockchain Based on Stale Block Rate", M. Chen, P. Shi, X. Fu, F. Jiang, F. Gao, P. Ma, J. Kong</p> <p>"Scale Expansion for Multi-agent Reinforcement Learning using Shared Actor Parameters", N. Yang, K. Xu, B. Ding, D. Feng</p>	<p>BDS WORKSHOP 1: Big Data Service-oriented Intelligent Resource Management, Information Security, and Privacy Preservation for Future Communications and Networking (ONLINE)</p> <p>Chairs: Yingchi Mao, Hohai University, China; Ping Ping, Hohai University, China; Wankou Yang, Southeast University</p> <p>"CACRM: Cross-Attention Based Image-Text CrossModal Retrieval", H. Yu, J. Suo, Y. Mao, J. Sui, P. Ping</p> <p>"A Federated Learning Backdoor Attack Defense Method Based on Dual Attention Mechanism", Y. Jin, Y. Mao, H. Nie, Z. Tu, P. Ping, J. Huang</p> <p>"IEMAM: Image-Feature Extraction Based on Multi-Scale Attention Mechanism", Z. Wang, Y. Mao, L. Shen, P. Ping, Z. Zhang, Z. Chen</p>			<p>BDS POSTER SESSION 1 (ONLINE - 9:30 - 10:00)</p> <p>Chair: Monica Vitalli</p> <p>"Fine-Tuning Language Models to Mitigate Gender Bias in Sentence Encoders", T. Dolci</p> <p>"A Low Power Dynamic Latched Comparator in 0.13-μm CMOS Process for Energy Efficient Computation", M. Reaz, M. Chowdhury, H. Ab Hamid, F. Haque, K. Zaman</p> <p>"An Expansion on Prioritized Experience Replay with Round Robin Scheduling", A. Solis</p> <p>"Vision: Delphi Study to Identify Criteria for the Systematic Assessment of Data Protection Risks in the Context of Big Data Analytics", G. Georgiadis, G. Poels</p>
10:00 - 10:30	COFFEE BREAK				

10:30 - 12:00		<p>BDS WORKSHOP 2: Industrial AI and Machine Learning (ONLINE)</p> <p>Chairs: Ajinkya Prabhune, SRH Hochschule Heidelberg, Germany (Main Chair); Marcel Dix, ABB Corporate Research Center, Germany; Ashish Chouhan, SRH University Heidelberg, Germany</p> <p>"Comparing human and algorithmic anomaly detection for HVAC systems applications", R. Borrison, M. Syndicus, A. Orth, R. Markovic, M. Dix, A. Liguori, M. Berning, A. Wagner, C. van Treeck</p> <p>"Convolutional Kernel-Based Transformation and Clustering of Similar Industrial Alarm Floods", G. Manca, M. Dix, A. Fay</p> <p>"Using Siamese Neural Networks on Threshold Maps of Infrared Images to Detect Equipment Faults", R. Gitzel, H. Kaul, M. Dix</p>			<p>BDS POSTER SESSION 2 (ONLINE - 11:30 - 12:00)</p> <p>Chair: Iraklis Varlamis</p> <p>"Network flow detection of semantic relationship between flow and byte", Y. Luo, M. He, X. Wang, L. Jin</p> <p>"An Energy-Efficient Ensemble-Based Computational Social System for Fake News Detection in MANET Messaging", A. Ramkissoon, W. Goodridge</p> <p>"Enhanced Algorithmic Job Matching based on a Comprehensive Candidate Profile using Machine Learning", V. Pendyala, N. Atrey, T. Aggarwal, S. Goyal</p>
12:00	CLOSE OF EVENT				