

Day 1

Session 1A: AI/ML based Smart Design 1 (9:55 - 11:05)

Edge-Assisted Generative AI-Driven Video Communication using Topological Data Analysis

Rohit Bhusal and Hongzhi Guo (University of Nebraska-Lincoln, USA); Ian Fuat Akyildiz (Editor in Chief for ITU-Journal for FET, International Telecom Union & Truva Inc., USA)

Real-Time Drone Flight Height Decision for 3D Building Reconstruction with NeRF

Shenghao Jia, Chaoyue Niu and Fan Wu (Shanghai Jiao Tong University, China)

DrinkMR: Unobtrusive Drinking Monitoring Using Off-The-Shelf Smart Glasses

Ruxin Wang (Southern Methodist University, USA); Gabrielle Gonzalez (Health Sciences Center, Louisiana State University, USA); Wen Liu and Chen Wang (Southern Methodist University, USA); Tung-Sung Tseng (Health Sciences Center, Louisiana State University, USA)

CollectiveFL: Edge-to-Edge Collective Intelligence Transfer in Federated Continual Learning

JinYi Yoon (Virginia Tech, USA); HyungJune Lee (Ewha Womans University, Korea (South))

Session 1B: Algorithm and Theory (9:55 - 11:05)

RESCUER: QoS-Aware Service Rescheduling in Serverless Crowdsourced Edge Cloud Clusters

Shihao Shen (Tianjin University, China); Cheng Zhang (Tianjin University of Finance and Economics, China); Chao Qiu and Xiaofei Wang (Tianjin University, China); Wenyu Wang (Shanghai Zhuichu Networking Technologies Co., Ltd., China)

Multimodal Remote Inference

Keyuan Zhang (Virginia Tech, USA); Yin Sun (Auburn University, USA); Bo Ji (Virginia Tech, USA)

Effective Delayed Patching for Transient Malware Control on Networks

Minh Phu Vuong and Chul-Ho Lee (Texas State University, USA); Do Young Eun (North Carolina State University, USA)

Adaptive Waveform Shaping for SINR-Optimal Interference Avoidance in OFDM Systems

Hatef Nouri (Florida Atlantic University & Center for Connected Autonomy and AI (CA-AI), USA); George Sklivanitis and Dimitris A. Pados (Florida Atlantic University, USA); Elizabeth Serena Bentley (AFRL, USA)

Session 2A: Security and Privacy 1 (11:20 – 12:30)

ViKey: Secure Door Access Control Using Passive Visible Light Tags

Jaskirat Sudan and Fatima Qasem (University of Michigan-Dearborn, USA); Hasky E Fynn (Kwame Nkrumah University of Science and Technology, Ghana); Fatima Mohammed and Ashwin Sarvadey (University of Michigan-Dearborn, USA); Tian Xie (Utah State University, USA); Ang Li (The University of Michigan-Dearborn, USA); Xiao Zhang (University of Michigan-Dearborn, USA)

Prospect Theoretic Hypothesis Testing-based Cyber Deception

Abhinav Kumar and Swastik Brahma (University of Cincinnati, USA); Baocheng Geng (University of Alabama at Birmingham, USA); Charles A Kamhoua (DEVCOM Army Research Laboratory & Network Science Division, USA)

An Interpretable Multi-Modal Transformer-Based Intrusion Detection System Utilizing Log and PCAP

Nadia Niknami and Vahid Mahzoon (Temple University, USA); Rajorshi Biswas (Pennsylvania State University, USA); Slobodan Vucetic (Vucetic, USA); Jie Wu (China Telecom Cloud Computing Research Institute, USA & Temple University, USA)

Non-Invasive User Profiling through Label Inference in FL-based Network Traffic Classification

Huiwen Zhang and Feng Ye (University of Wisconsin-Madison, USA)

Session 2B: Systems and Applications 1 (11:20 - 12:30)

PCG: Enhancing Object Distance Estimation via Patch-to-Center Geometry

Zhiyuan Guan, Zhiqiang Wang and Jiahui Hou (University of Science and Technology of China, China); Zhentan Feng (NIO, China)

Characterizing and Understanding Energy Footprint and Efficiency of Small Language Model on Edges

Md Romyull Islam, Bobin Deng, Nobel Dhar, Tu N. Nguyen, Jing (Selena) He, Yong Shi and Kun Suo (Kennesaw State University, USA)

Efficient Zero-Cost Neural Architecture Search for Personalized AI Systems in Cloud-Edge Networks

Kai Huang, Yingchi Mao, Benteng Zhang, Yihan Chen and Yuchu Chen (Hohai University, China); Jie Wu (China Telecom Cloud Computing Research Institute, USA & Temple University, USA)

Argus-ear: Unconstrained-Vocabulary Sound Eavesdropping via μ m-level mmWave Sensing

Jiyang Chen and Jianwei Liu (Zhejiang University, China); Jinsong Han (Zhejiang University & School of Cyber Science and Technology, China)

Session 3A: Invited paper: AI/ML Modeling and Applications (2:00 - 3:10)

Safe and Reliable Deep Reinforcement Learning for Covert Routing

Amirhossein Roknilamouki (Ohio State University, USA); Fikadu Dagefu (Army Research Laboratory, USA); Eylem Ekici (The Ohio State University, USA); Brian Kim (DEVCOM Army Research Laboratory, USA); Justin Kong (US Army Research Laboratory, USA); Terrence J. Moore (Army Research Laboratory, USA); Yin Sun (Auburn University, USA); Ness B. Shroff (The Ohio State University, USA)

RFID-Based Vital Sign Monitoring Under Motion Using Physics-Informed Generative Models

Ningning Wang, Yiting Wang and Tianya Zhao (Florida International University, USA); Yuwei Dai and Harrison Bai (Johns Hopkins University School of Medicine, USA); Karthik Suresh (Johns Hopkins University, USA); Zhicheng Jiao (Brown University Health, USA); Shiwen Mao (Auburn University, USA); Xuyu Wang (Florida International University, USA)

Deep Bidirectional LSTM-Based Sensor Fusion for 3D Localization in Dynamic Environments

Tehmina Bibi (TU Berlin, Germany); Anselm Köhler and Jan-Thomas Fischer (Austrian Research Centre for Forests, Austria); Falko Dressler (TU Berlin, Germany)

Session 3B: Protocols and Emerging Technologies 1 (2:00- 3:10)

Service Route Optimization for Autonomous Vehicles in Edge-Assisted Cellular Infrastructure

Sangwoo Cho and Yeongjin Kim (Inha University, Korea (South))

SkyDecoy: Drone-Assisted Decoy Strategies for Preserving Location Privacy in Sky-of-Privacy-Things

Anisa Bente Newaz, Sunho Lim and Sthephany Rojas Sabogal (Texas Tech University, USA); Jinseok Chae and Jangho Lee (Incheon National University, Korea (South))

Efficient HVAC Control using Machine Learning and Adaptive Differential Evolution

Jainam J. Dhruva and Simone Silvestri (University of Kentucky, USA)

SFMAC: Bleeps that enable high-density LoRaWANs

Maria Teresa Blanco Abad (Cognizant, The Netherlands); Vijay Rao (The Netherlands); Nikos Kouvelas (IMEC, The Netherlands); R Venkatesha Prasad (Delft University of Technology, The Netherlands); Kumaralingam Ramamoorthy (Cognizant, The Netherlands); Sujay Narayana (TU Delft, The Netherlands)

Session 4A: System and Applications 2 (3:30 - 4:40)

PreFall: Early Detection of Consecutive Fall Events with Commercial Wi-Fi Devices

Zhiwei Zheng, Junfeng Zhu, Shigeng Zhang and Yalong Xiao (Central South University, China)

Detecting Untargeted Attacks and Mitigating Unreliable Updates in Federated Learning for Underground

Md Sazedur Rahman (Missouri University of Science and Technology, USA); Mohamed Elmahallawy (Washington State University, USA); Sanjay Madria and Samuel Frimpong (Missouri University of Science and Technology, USA)

PlaCoB: Collaborative Beamforming for Long Range Platoon-to-Platoon Communication

Griffin Klevering and Kanishka P Wijewardena (Michigan State University, USA); Xiao Zhang (University of Michigan-Dearborn, USA); Joshua Siegel and Li Xiao (Michigan State University, USA)

Robust Uplink Ranging in 5G Networks: An Integrated O-RAN Approach

Viola Bernazzoli, Pietro Morri, Eugenio Moro, Mattia Brambilla, Ilario Filippini and Monica Nicoli (Politecnico di Milano, Italy)

Session 4B: AI/ML based Smart Design 2 (3:30 - 4:40)

An Efficient and Explainable KAN Framework for Wireless Radiation Field Prediction

Jingzhou Shen and Xuyu Wang (Florida International University, USA)

Cooperative Deep Q-Learning for Strategic Backup Scheduling in Smart Grid Recovery

Vaji Farhadi and James Giffen (Bucknell University, USA)

Vision-Language Modeling for Scene Understanding and Reasoning of Vehicle-to-X Interactions

Hao Wang and Suining He (School of Computing, University of Connecticut, CT, USA)

Distributed Context-Aware Resource Allocation for Dynamic Sensor Fusion in Edge Inference

Yashuo Wu (University of California Irvine, USA); Carla Fabiana Chiasserini (Politecnico di Torino & CNIT, IEIT-CNR, Italy); Marco Levorato (University of California, Irvine, USA)

Poster & Demo Session (16:45-17:45)

SmartMail: A Real-Time Intelligent Mail Management System with Multimodal Learning

Jia-Ming Liang (National University of Tainan (NUTN), Taiwan); Shashank Mishra (Academia Sinica, Taiwan); Kun-Lin Liu (National University of Tainan, Taiwan)

Smart_Safe: AI-Driven Safety System for Indoor Industrial Environments Using Wearable and Auto-ID

Pavel Stasa, Filip Benes, Jiri Svub, Veroslav Holusa, Miroslava Obrusnikova, Jan Dulovec and Lukas Hollesch (VSB - Technical University of Ostrava, Czech Republic); Jakub Unucka (Gaben, Czech Republic); Jongtae Rhee and Jin-Woo Jung (Dongguk University, Korea (South))

Integrated Air Filtration System with Adaptive Regeneration for Public Transport and Industrial Appl

Pavel Stasa, Filip Benes, Jiri Svub, Veroslav Holusa and Miroslava Obrusnikova (VSB - Technical University of Ostrava, Czech Republic); Jakub Unucka (Gaben, Czech Republic); Yong-Shin Kang (Advanced Institute of Convergence Technology, Korea (South)); Sang Do Noh (Sungkyunkwan University, Korea (South))

Poster: Meter-Range Passive NFC for Battery-free Internet of Things

Dickson Akuoko Sarpong and Hongzhi Guo (University of Nebraska-Lincoln, USA)

Demo: A Passive Optical Tagging Approach for Secure and Revocable Entry Systems

Hasky E Fynn (Kwame Nkrumah University of Science and Technology, Ghana); Jaskirat Sudan, Fatima Qasem, Fatima Mohammed and Xiao Zhang (University of Michigan-Dearborn, USA)

Optimization of Warehouse Management Using Drones, Artificial Intelligence and RFID

Pavel Stasa, Filip Benes, Jiri Svub, Veroslav Holusa, Miroslava Obrusnikova, Jan Dulovec and Lukas Hollesch (VSB - Technical University of Ostrava, Czech Republic); Jakub Unucka (Gaben, Czech Republic); Jongtae Rhee and Jin-Woo Jung (Dongguk University, Korea (South))

SDR Testbed for Mobile Distributed MIMO

Yibin Liang, Usama Saeed and Ramin Safavinejad (Virginia Tech, USA); Nima Mohammadi (Virginia Polytechnic Institute and State University, USA); Lingjia Liu (Virginia Tech, USA)

PAVE: Privacy-Preserving Aggregated Verification For Multi-Enterprises Blockchain

Xiaoxue Zhang (University of Nevada, Reno, USA); Sammy Tesfai (University of California Santa Cruz, USA); Minmei Wang (University of Connecticut, USA); Haofan Cai (University of Hawaii at Manoa, USA)

Day 2

Session 5A: AI/ML based Smart Design 3 (9:55 - 11:05)

Location- and Modality-aware Heterogeneous Data Fusion for Cooperative Perception

Tingcong Jiang, Chuanneng Sun and Dario Pompili (Rutgers University, USA)

DFed-LaMA: Differentially Private Federated Learning via Adaptive Layer-Wise Model Aggregation

Tengfei Wang, Teng Liu and Xin Wang (Qilu University of Technology, China); Heng Zhang (Jiangsu Ocean University, China); Ming Yang (Qilu University of Technology, China); Xiaoming Wu (Shandong University of Science and Technology & Shandong Computer Science Center, China)

Energy-Efficient Split Learning for Resource-Constrained Environments: A Smart Farming Solution

Keiwan Soltani (Missouri University of Science and Technology, USA); Vishesh K Tanwar (Missouri University of Science and Technology, USA & Indian Institute of Technology Roorkee, India); Ashish Gupta (Birla Institute of Technology & Science, United Arab Emirates); Sajal K. Das (Missouri University of Science and Technology, USA)

Learning Low-Dimensional Representation for O-RAN Testing via Transformer-ESN

Jiongyu Dai and Raymond Zhao (Virginia Tech, USA); Farhad Rezazadeh (Universidad Polit cnica de Catalu a (UPC), Spain); Lizhong Zheng (Massachusetts Institute of Technology, USA & MIT, USA); Haining Wang and Lingjia Liu (Virginia Tech, USA)

Session 5B: Security and Privacy 2 (9:55 - 11:05)

Base Station Certificate and Authentication for 5G Radio Control Security

Sourav Purification and Simeon J Wuthier (University of Colorado Colorado Springs, United States); Jinoh Kim (East Texas A&M University, USA); Ikkyun Kim (ETRI, Korea (South)); Sang-Yoon Chang (University of Colorado Colorado Springs, United States)

FL-SNNs: Benchmarking the Byzantine-Robustness of Uniquely-Shaped Surrogate Gradients

Manh V Nguyen, Liang Zhao, Bobin Deng and Shaoen Wu (Kennesaw State University, USA)

Converting Your Bluetooth Headphones into Active Sensing Authenticator: a Bond-Conduction Solution

Jingwei Zhang (Southern Methodist University, USA); Ruxin Wang (USA, USA); Chen Wang (Southern Methodist University, USA)

Data-Free Backdoor Attacks on Self-Supervised Human Activity Recognition Models

Tianya Zhao and Xuyu Wang (Florida International University, USA)

Session 6A: Invited Paper: Next-Generation Wireless Networking (11:20 - 12:30)

XAI4C: An XAI-powered Conflict Detection Framework in O-RAN

Nancy Varshney, Federico Mungari and Corrado Puligheddu (Politecnico di Torino, Italy); Ahmed Badawy (Qatar University, Qatar); Carla Fabiana Chiasserini (Politecnico di Torino & CNIT, IEIT-CNR, Italy)

On Network-Efficient Multimodal Multi-Vantage Foundation Models for Distributed Sensing
Tianchen Wang (University of Illinois at Urbana Champaign, USA); Yizhuo Chen, Hongjue Zhao, You Lyu, Jinyang Li and Tomoyoshi Kimura (University of Illinois at Urbana-Champaign, USA); Yigong Hu (University of Illinois Urbana-Champaign, USA); Denizhan Kara (UIUC, USA); Maggie Wigness and Jeffrey Twigg (DEVCOM Army Research Laboratory, USA); Tarek Abdelzaher (University of Illinois, Urbana Champaign, USA & University of Illinois, USA)

Federated Learning for Edge WiFi Sensing: Improving Few-Shot Learning Across Various Classifications
Jianchao Song, Usman Musa, Yixin Chen, Papa Pene, Yifan Guo and Wei Yu (Towson University, USA)

Session 6B: System and Applications 3 (11:20 - 12:30)

Root Cause Analysis of Cellular Network Throughput Degradations under Vehicular Mobility

Eduardo Baena and Zihan Xu (Northeastern University, USA); Moinak Ghoshal (Northeastern University, Boston, MA, USA); Imran Khan and Phuc Dinh (Northeastern University, USA); Z. Jonny Kong and Y. Charlie Hu (Purdue University, USA); Dimitrios Koutsonikolas (Northeastern University, USA)

Energy-Aware Multi-Modal Vision Transformer (ViT) based C-V2X Cooperative Perception in CAVs

Synnove Svendsen (Western Washington University, USA); Brandon Ramriez (Western Washington University, USA); Jonah Duncan (Western Washington University, USA); Tran Minh Khoi Le and Junaid Ahmed Khan (Western Washington University, USA)

DailyLLM: Context-Aware Activity Log Generation Using Multi-Modal Sensors and LLMs

Ye Tian (University of California San Diego, USA); Xiaoyuan Ren and Zihao Wang (University of California, San Diego, USA); Onat Gungor and Xiaofan Yu (University of California San Diego, USA); Tajana Rosing (University of California, San Diego, USA)

Enabling Joint Sensing and Communication via STBC Assisted NOMA in ISAC Systems

Anindya Bal (University of Hawaii at Manoa, USA & University of Hawaii, USA); Haofan Cai and Hanqing Guo (University of Hawaii at Manoa, USA); Yao Zheng (University of Hawai'i at Mānoa, USA); Xiaoxue Zhang (University of Nevada, Reno, USA)

Session 7A: AI/ML based Smart Design 4 (3:30 - 4:40)

RIFLES: Resource-efficient Federated LEarning via Scheduling

Sara Alosaime (University of Warwick, United Kingdom (Great Britain) & Shaqra University, Saudi Arabia); Arshad Jhumka (University of Leeds, United Kingdom (Great Britain))

Large Vision-Language Model-Assisted Information-Rich Semantic Segmentation

Haiqiao Liu, Songjun Huang, Chuanneng Sun, Dario Pompili and Jie Gong (Rutgers University, USA)

Privacy-Preserving Crowd Size Estimation Using Wi-Fi and Machine Learning

Pegah Torkamandi (Technische Universität München, Germany); Navid Hasanzadeh (University of Toronto, Canada); Jörg Ott (Technische Universität München, Germany); Shahrokh Valaee (University of Toronto, Canada)

VIOSem: Visual-Inertial Odometry via Semantic Communication-enhanced Modulation Design

Kanishka P Wijewardena and Griffin Klevering (Michigan State University, USA); Xiao Zhang (University of Michigan-Dearborn, USA); Li Xiao (Michigan State University, USA)

Session 7B: System and Applications 4 (3:30 - 4:40)

Parecon: Enhancing Mobile AI Vision Apps through DNN Partition and Resolution Control

Junsoo Park and Yeongjin Kim (Inha University, Korea (South))

RTASP: Real-Time Actuator and Sensor Platform

Yinze Li and Brendan J. Mackenzie (KU Leuven, Belgium); Stefan Lommaert (Datashift NV, Belgium); Tom Van Eyck and Zhaoyi Liu (KU Leuven, Belgium); David Newton and Friedrich Wolf-Monheim (Ford Motor Company, Germany); Sam Michiels and Danny Hughes (KU Leuven, Belgium)

Reliable Multi-view 3D Reconstruction for 'Just-in-time' Edge Environments

Md Nurul Absur (Graduate Center, CUNY, USA); Abhinav Kumar and Swastik Brahma (University of Cincinnati, USA); Saptarshi Debroy (City University of New York, USA & Hunter College, USA)

Distributed Participant Selection in Networks of Heterogeneous Drones for Federated Learning

Chenyang Wang, Qi Han and Andrew Bernklau (Colorado School of Mines, USA)

Fingerprint Authentication Using Vibration-boosted Refreshing Touchscreen

Wen Liu, Zeyu Deng and Chen Wang (Southern Methodist University, USA)

Session 8A: Protocols and Emerging Technologies 2 (3:30 - 4:40)

2-Pipe: Simultaneous Downlink Transmissions with the Same Spreading Factor in LoRa Networks

Raghav Rathi, Yilin Wang and Zhenghao Zhang (Florida State University, USA)

LACE: Loss-Aware Constellation Design for Global-Scale Entanglement Distribution

Huayue Gu (North Carolina State University, USA); Runzhe Mo and Quntao Zhuang (University of Southern California, USA); Ruozhou Yu (North Carolina State University, USA)

Fast Consensus with Retries and Priority Upgrade

Elham Amini (Ryerson University, Canada); Jelena Mišić and Vojislav B. Mišić (Toronto Metropolitan University, Canada)

Fast Consensus with Retries and Priority Upgrade

Elham Amini (Ryerson University, Canada); Jelena Mišić and Vojislav B. Mišić (Toronto Metropolitan University, Canada)

A Dual-Layer Blockchain Sharding Scheme

Sima Naderi Mighan, Jelena Mišić and Vojislav B. Mišić (Toronto Metropolitan University, Canada)

RansomNet: Ransomware Classification Using Sub-Graph Mining of Function Call Graphs

Garvit Agarwal (Purdue University, USA); Yucheng Xie (Yeshiva University, USA); Yousef Mohammed Y Alomayri and Feng Li (Purdue University, USA)