**ICCCN 2024**

**The 33rd International Conference on**

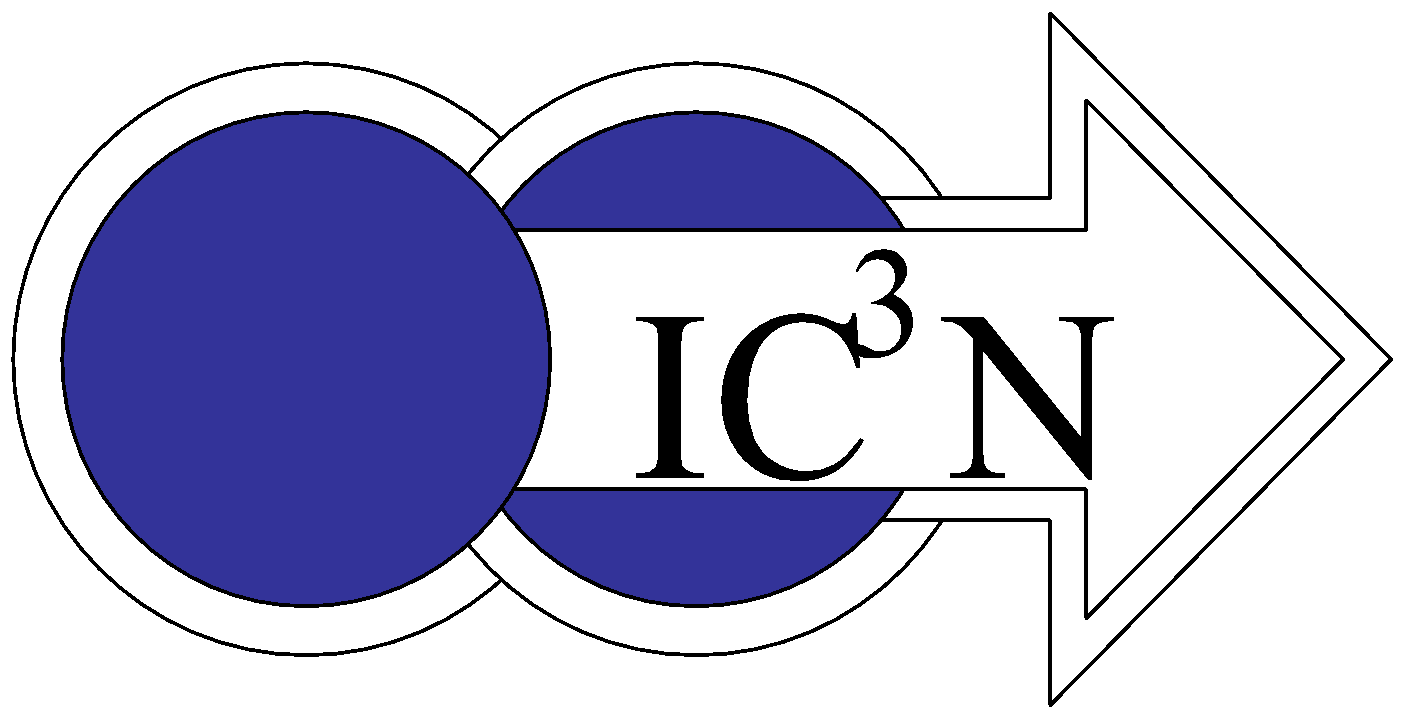
**Computer Communications and Networks**

**July 29 – July 31, 2024**

**Technical Program**

**Big Island, HI, USA**



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**ICCCN 2024 Program Overview**

|  |  |  |  |  |  |  |
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| **July 28, 2024 (Sunday)** | | | | | | |
| 21:00–22:00 | Registration Open (KCC Foyer) | | | | | |
| **July 29, 2024 (Monday)** | | | | | | |
| 7:30 | **Registration Open** (KCC Foyer) | | | | | |
| 8:15-8:30 | **Opening Remarks**  Room: Keauhou II | | | | | |
| 8:30-9:30 | **Keynote I: Practical Integrated Sensing and Communication for 6G**  Speaker: **Dr. Joerg Widmer**, IMDEA Networks  Chair: Prof. Tommaso Melodia, Northeastern University, USA  Room: Keauhou II | | | | | |
| 9:30-10:00 | Coffee break | | | | | |
| 10:00-12:00 | **Session 1**: Security, Privacy and Trust I  (Keauhou I) | | **Session 2**: Network Architectures, Protocols and Optimization I  (Keauhou II) | | **Session 3**: Invited Talks 1  (Keauhou III) | |
| 12:00-13:30 | Lunch break (lunch is not provided) | | | | | |
| 13:30-15:00 | **Panel I: When Networking meets AI: Applying LLM enabled AI Native approach for intent based future edge networks**  Moderator: Dr. Abhimanyu (Manu) Gosain, Northeastern University, USA Room: Keauhou II | | | | | |
| 15:00-15:30 | Coffee break | | | | | |
| 15:30-17:30 | **Session 4**: Social Networks, Extended Reality and Metaverse  (Keauhou I) | | **Session 5**: Edge and Cloud Computing (Keauhou II) | | **Session 6**: Invited Talks 2  (Keauhou III) | |
| 18:30 – 20:00 | **Conference Reception** (Bayview Meeting Room) | | | | | |
| **July 30, 2024 (Tuesday)** | | | | | | |
| 8:00 | **Registration Open** (KCC Foyer) | | | | | |
| 8:30-9:30 | **Keynote II: Application Customized Networking**  Speaker: **Prof. Minlan Yu**, Harvard  Chair: Prof. Enzo Mingozzi, University of Pisa, Italy  Room: Keauhou II | | | | | |
| 9:30-10:00 | Coffee break | | | | | |
| 10:00-12:00 | **Session 7**: Security, Privacy and Trust II  (Keauhou I) | | **Session 8**: Network Architectures, Protocols and Optimization II  (Keauhou II) | | **Session 9**: Invited Talks 3  (Keauhou III) | |
| 12:00-13:30 | Lunch break (lunch is not provided) | | | | | |
| 13:30-15:00 | **Panel II: 6G research – are we there yet?**  Moderator: Dr. Ali Khayrallah, Senior Technical Advisor, Advanced Technology Group, Ericsson, USA  Room: Keauhou II | | | | | |
| 15:00-15:30 | Coffee break | | | | | |
| 15:30-17:30 | **Session 10**: Security, Privacy and Trust III  (Keauhou I) | | **Session 11**: Pervasive Communications, Networking and Sensing  (Keauhou II) | | **Session 12**: Invited Talks 4  (Keauhou III) | |
| 19:00 – 21:30 | **Conference Banquet** (Bayview Meeting Room) | | | | | |
| **July 31, 2024 (Wednesday)** | | | | | | |
| 8:00 | **Registration Open** (KCC Foyer) | | | | | |
| 8:30-9:30 | **Keynote III: Neural Feature Learning for Engineering Problems**  Speaker: **Prof. Lizhong Zheng**, MIT  Chair: Prof. Krishna Kant, Temple University, USA  Room: Keauhou II | | | | | |
| 9:30-10:00 | Coffee break | | | | | |
| 10:00-12:00 | **Session 13**: IoT and Cyber-Physical Systems  (Keauhou I) | **Session 14**: Invited Talks 5 (Keauhou II) | | **Session 15**: Workshop ISCC-IoT  (Keauhou III) | | **Session 16**: Workshop BDMLN  (Keauhou IV) |
| 12:00-13:30 | Lunch break (lunch is not provided) | | | | | |
| 13:30-15:00 | **Session 17**: Workshop COHERENT  (Keauhou I) | **Session 18**: Workshop SmartCityCom (Keauhou II) | | **Poster**  (Keauhou III) | |  |
| 15:00-15:30 | Coffee break | | | | | |
| 15:30-17:30 | **Session 19**: Workshop BDSSN I  (Keauhou I) | **Session 20**: Workshop AIECN I (Keauhou II) | | **Session 21**: Workshop IoTSPT  (Keauhou III) | | **Session 22**: Workshop BDSSN II+AIECN II  (Keauhou IV) |

**ICCCN 2024 Technical Program**

**July 29 (Monday)**

**8:30-9:30**

#### Keynote I: Practical Integrated Sensing and Communication for 6G

Speaker: Dr. Joerg Widmer, IMDEA Networks

Chair: Prof. Tommaso Melodia, Northeastern University, USA

**9:30 – 10:00 Coffee break**

**10:00-12:00**

**Session 1: Security, Privacy and Trust I**

Chair: Sang-Yoon Chang, University of Colorado Colorado Springs (USA)

* A Neuro-Symbolic Artificial Intelligence Network Intrusion Detection System

Alice Bizzarri, Brian Jalaian, Fabrizio Riguzzi and Nathaniel D. Bastian

* Agent Deprogramming Finetuning Away Backdoor Triggers for Secure Machine Learning Models

Demarcus Edwards and Danda B. Rawat

* Unveiling Dataset Complexity’s Impact on Deep Learning Network Intrusion Detection

Alexis Huante and Mustafa Al Lail

* QuadraCode AI: Smart Contract Vulnerability Detection with Multimodal Representation

Jiblal Upadhya, Kritagya Upadhyay, Arpan Sainju, Samir Poudel, Md Nahid Hasan, Khem Poudel and Jaishree Ranganathan

* RobustETH: Ensuring Economic Fairness in ETH2.0’s Distributed Validator Technology

Shenghang Chen, Zhicheng Xu, Kun Zhou, Xiaoli Zhang and Hongbing Cheng

#### Session 2: Network Architectures, Protocols and Optimization I

Chair: Antonio Virdis, University of Pisa (Italy)

* Flow Correlator: A Flow Table Cache Management Strategy

Luke McHale, Paul Gratz and Alex Sprintson

* In-network Reinforcement Learning for Attack Mitigation using Programmable Data Plane in SDN

Aparna Ganesan and Kamil Sarac

* Detecting IP Prefix Mismatches on SDN Data Plane

Shu-Po Tung, Yu-Min Lin, Keng-Lun Chang, Hsu-Chun Hsiao and Tiffany Hyun-Jin Kim

* Energy-Efficient Deployment of Stateful FaaS Vertical Applications on Edge Data Networks

Claudio Cicconetti, Raffaele Bruno and Andrea Passarella

* Lightweight Coordinated Sampling for Dynamic Flows under Budget Constraints

Mingming Chen, Tom La Porta, Trent Jaeger and Srikanth Krishnamurthy

* Efficient URL and URI Compression

Felix Savins, Kevin Saric, Gowri Sankar Ramachandran and Raja Jurdak

**Session 3: Invited Talks 1**Chair: Vijayakumar Bhagavatula, Carnegie Mellon University (USA)

* Poisoning Federated Learning with Graph Neural Networks in Internet of Drones

Kai Li, Alam Noor, Wei Ni, Eduardo Tovar, Xiaoming Fu and Ozgur Akan

* Learning-Based WiFi Fingerprint Inpainting via Generative Adversarial Networks

Yu Chan, Pin-Yu Lin, Yu-Yun Tseng, Jen-Jee Chen and Yu-Chee Tseng

* Traffic Engineering in Large-scale Networks via Multi-Agent Deep Reinforcement Learning with Joint-Training

Van An Le, Duc Long Nguyen, Phi Le Nguyen and Yusheng Ji

* FedAR: Federated Learning with the Adaptive Regularization for Non-IID Data

Linsi Lan, Junbo Wang, Qing Yuan and Celimuge Wu

* RecuGAN: A Novel Generative AI Approach for Synthesizing RF Coverage Maps

Sopan Sarkar, Mohammad Hossein Manshaei, Marwan Krunz and Hamid Ravaee

* FL-EVCS: Federated Learning based Anomaly Detection for EV Charging Ecosystem

Shaurya Purohit and Manimaran Govindarasu

**12:00 – 13:30 Lunch break**

## 13:30-15:00

#### Panel I: When Networking meets AI: Applying LLM enabled AI Native approach for intent based future edge networks

Moderator: Dr. Abhimanyu (Manu) Gosain, Northeastern University, USA

Panelists: Dr. Yingbin Liang, Ohio State University, USA**;** Dr. Hongwei Zhang, Iowa State University, USA**;** Dr. Akihiro Nakao, University of Tokyo, Japan**;** Dr. JongWon Kim, Gwangju Institute of Science & Technology, South Korea

**15:00 – 15:30 Coffee break**

## 15:30-17:30

**Session 4: Social Networks, Extended Reality and Metaverse**

Chair: Rana Hegazy, University of California San Diego (USA)

* Deadline-oriented Flow Control for Real-time UHD Videos in 5G Edge Networks

Wanghong Yang, Wenji Du, Baosen Zhao, Tingting Yuan, Yongmao Ren, Xu Zhou, Qinghua Wu and Xiaoming Fu

* Brain-Aware End-to-End Delay for Concurrent uVR and Machine Type Traffic in Next-Generation Computing Systems

Benedetta Picano

* **SleepWalker: Constrastive Fine-tuning Technique for Text to Kinematics Models for Human Computer Interaction**

Demarcus Edwards and Danda B. Rawat

* Evaluation of Hardware-based Video Encoders on Modern GPUs for UHD Live-Streaming

Kasidis Arunruangsirilert and Jiro Katto

* Large Language Model-Guided Disentangled Belief Representation Learning on Polarized Social Graphs

Jinning Li, Ruipeng Han, Chenkai Sun, Dachun Sun, Ruijie Wang, Jingying Zeng, Yuchen Yan, Hanghang Tong and Tarek Abdelzaher

* Toward Multimodal Vertical Federated Learning: A Traffic Analysis Case Study

Agnideven Palanisamy Sundar, Feng Li, Xukai Zou and Tianchong Gao

#### Session 5: Edge and Cloud Computing

Chair: Claudio Cicconetti, CNR-IIT (Italy)

* Cloudy Forecast: How Predictable is Communication Latency in the Cloud?

Owen Hilyard, Bocheng Cui, Marielle Webster, Abishek Bangalore Muralikrishna and Aleksey Charapko

* Towards Optimal Load Balancing in Multi-Zone Kubernetes Clusters via Reinforcement Learning

José Santos, Tim Wauters, Filip De Turck and Peter Steenkiste

* Cooperative Task Offloading for Multi-Access Edge-Cloud Networks: A Multi-Group Multi-Agent Deep Reinforcement Learning

Akito Suzuki, Masahiro Kobayashi and Eiji Oki

* Individual Dynamic Real-Time Range Queries in Adaptive Quad Streaming

Simon Keller and Rainer Mueller

* An Edge Resource Selection Scheme Considering QoS and Computational Parameters

Matthias Frei, Reinhard German and Anatoli Djanatliev

* Impact of Client Choice on Distributed Resource Allocation in Edge Computing

Caroline Rublein, Fidan Mehmeti, Mark Mahon and Thomas La Porta

**Session 6: Invited Talks 2**Chair: Haofan Cai, University of Hawaiʻi at Mānoa (USA)

* A Novel Neural Networks-based Framework for APT Detection in Networked Autonomous Systems

Hassan El Alami and Danda B. Rawat.

* Hybrid Quantum-Classical Computing via Dantzig-Wolfe Decomposition for Integer Linear Programming

Xinliang Wei, Jiyao Liu, Lei Fan, Yuanxiong Guo, Han Zhu and Yu Wang

* Beyond Wake Words: Advancing Smart Speaker Protection with Continuous Authentication and Local Profiles

Luca Hernandez Acosta, Andreas Reinhardt, Tobias Müller and Delphine Reinhardt

* CasePad: Privacy-preserving Finger Activity Sensing via Passive Acoustic Signals Enhanced by Mini-Structures in Smartphone Cases

Zhengkun Ye, Yan Wang and Yingying Chen

* Adversarial Attack Detection for Deep Learning Driving Maneuver Classifiers in Connected Autonomous Vehicles

Tanmoy Sen and Haiying Shen

* Foundations of General and In-Network Quantum Computing for Future Communication Networks

Yannik Böck, Holger Boche, Riccardo Bassoli and Frank Fitzek

## 18:30-20:00

#### Conference Reception

**July 30 (Tuesday)**

## 8:30-9:30

#### Keynote II: Application Customized Networking

Speaker: Prof. Minlan Yu, Harvard

Chair: Prof. Enzo Mingozzi, University of Pisa, Italy

**9:30 – 10:00 Coffee break**

## 10:00-12:00

**Session 7: Security, Privacy and Trust II**

Chair: Danda B. Rawat, Howard University (USA)

* DDD: A DNS-based DDoS Defense Scheme Using Puzzles

Hyeonmin Lee, Taehyun Kang, Sukhun Yang, Jinyong Jun and Taekyoung Kwon

* Redefining DDoS Attack Detection Using A Dual-Space Prototypical Network-Based Approach

Fernando Martinez, Mariyam Mapkar, Ali Alfatemi, Mohamed Rahouti, Yufeng Xin, Kaiqi Xiong and Nasir Ghani

* An Enhancement of RSA Cryptography Security with Bounded Bundled Data Circuit

Ruoyun Sun, Yuqing Liang, Kangli Zhao, Fei Fang, Anping He, An Wang and Xin Liu

* On Improved Efficiency and Forward Security of 0-RTT Key Exchange for SDP

Lei Zhang, Jingguo Ge, Yulei Wu, Tong Li, Hui Li and Yuepeng E

* Fake Base Station Detection and Blacklisting

Sourav Purification, Simeon Wuthier, Jinoh Kim, Jonghyun Kim and Sang-Yoon Chang

* Advancing Network Security with Quantum-safe System Integration

Jianzhou Mao, Guobin Xu, Eric Sakk and Shuangbao Wang

#### Session 8: Network Architectures, Protocols and Optimization II

Chair: Antonio Bazco-Nogueras, IMDEA Networks (Spain)

* TopoMiner: Efficient Topology Discovery for IPv6 Networks

Hongwei Li, Lin He, Wenwen Gong, Guanglei Song, Daguo Cheng, Jiahai Yang, Ying Liu and Li Tan

* Improving Web Content Delivery with HTTP/3 and Non-Incremental EPS

Abhinav Gupta and Radim Bartos

* Usage-Dependent Quality of Service for Free WiFi Networks

Robin Laidig, Jona Herrmann, Frank Dürr and Kurt Rothermel

* Comparing Space Versus Surface Gateways for Internetworking pLEO Satellite Networks

Allan Ko, Thomas Shake and Rahul Amin

* Secure and Efficient Entanglement Distribution Protocols for Near-Term Quantum Internet

Nicholas Skjellum, Mohamed Shaban and Muhammad Ismail

* GeNet: A Graph Neural Network-based Anti-noise Task-Oriented Semantic Communication Paradigm

Chunhang Zheng and Kechao Cai

**Session 9: Invited Talks 3**Chair: Stefano Basagni, Northeastern University (USA)

* Performance Analysis for Underwater Video Transmission with Imperfect Resampling

Rana Hegazy, Pamela Cosman and Laurence Milstein

* On the Potential of an Independent Avatar to Augment Metaverse Social Networks

Theofanis Raptis, Chiara Boldrini, Marco Conti and Andrea Passarella

* Impact of Latency and Bandwidth Limitations on the Safety Performance of Collaborative Perception

Dereje Shenkut and B.V.K. Vijaya Kumar

* ECG-grained Cardiac Monitoring Using RFID

Ningning Wang, Tianya Zhao, Shiwen Mao, Harrison X. Bai, Zhicheng Jiao and Xuyu Wang.

* iCorp: Enabling High-Precision Crop Disease Detection via LoRa Technology

Xu Tao, Jackson Butcher, Simone Silvestri, Flavio Esposito

* Digital Twin Continuum: a Key Enabler for Pervasive Cyber-Physical Environments

Antonello Barbone, Samuele Burattini, Matteo Martinelli, Marco Picone, Alessandro Ricci and Antonio Virdis

**12:00 – 13:30 Lunch break**

## 13:30-15:00

#### Panel II: 6G research – are we there yet?

Moderator: Dr. Ali Khayrallah, Senior Technical Advisor, Advanced Technology Group, Ericsson, USA

Panelists: Dr. Ian C. Wong, Director of RF and Wireless Architecture, VIAVI Solutions; Dr. Nada Golmie, Fellow, Communications Technology Laboratory, NIST; Dr. Alhussein Abouzeid, Program Director, NSF

**15:00 – 15:30 Coffee break**

## 15:30-17:30

**Session 10: Security, Privacy and Trust III**

Chair: Taekyoung Kwon, Seoul National University (South Korea)

* Performance or Anonymity? Source-Driven Tor Relay Selection for Performance Enhancement

Kelei Zhang and Sang-Yoon Chang

* Appro-Fun: Approximate Machine Unlearning in Federated Setting

Zuobin Xiong, Wei Li and Zhipeng Cai

* Hide-and-Seek: Data Sharing with Customizable Machine Learnability and Privacy

Hairuo Xu and Tao Shu

* Explainability Guided Adversarial Evasion Attacks on Malware Detectors

Kshitiz Aryal, Maanak Gupta, Mahmoud Abdelsalam and Moustafa Saleh

* Explainability-Informed Targeted Malware Misclassification

Quincy Card, Kshitiz Aryal and Maanak Gupta

* Improving Android Malware Detection with Entropy Bytecode-to-Image Encoding Framework

Saleh Makkawy, Abdalrahman Alblwi, Michael De Lucia and Kenneth Barner

#### Session 11: Pervasive Communications, Networking and Sensing

Chair: Andreas Reinhardt, Clausthal University of Technology (Germany)

* Enabling Reliable Environmental Sensing with LoRa, Energy Harvesting, and Domain Adaptation

Jean C Tonday Rodriguez, Aitian Ma and Mo Sha

* Mitigating Cross-Technology Interference in Low-Power Wireless Networks

Waltenegus Dargie and Zegeye Mekasha Kidane

* Acoustic-based Alphanumeric Input Interface for Earables

Yilin Wang, Zi Wang and Jie Yang

* Eavesdropper-Avoiding Neighbor Discovery for Multi-Sector Directional Wireless Systems

Md Asif Ishrak Sarder, Murat Yuksel and Elizabeth Bentley

* UAV Trajectory Optimization for Air-to-Water Optical Wireless Channels

Sk Samiul Reza and Murat Yuksel

* RAPID: Reinforcement Learning-Aided Femtocell Placement for Indoor Drone Localization

Alireza Famili, Amin Tabrizian, Tolga Atalay, Angelos Stavrou and Peng Wei

**Session 12: Invited Talks 4**Chair: Eiji Oki, Kyoto University (Japan)

* LEMUR: Efficient Multicasting in Ad-hoc Networks Using Label Switching and Unicast Routing

Dylan Cirimelli-Low and J.J. Garcia-Luna-Aceves

* Cyrus: A DRL-based Puncturing Solution to eMBB/URLLC Multiplexing in O-RAN

Ehsan Ghoreishi, Bahman Abolhassani, Yan Huang, Shiva Acharya, Thomas Hou and Wenjing Lou

* Integrated Routing Clustering and Data Aggregation for Large-Scale Heterogeneous Internet of Things

Andrea David, Zack Halverson and Katia Obraczka

* Personalized and Context-aware Route Planning for Edge-assisted Vehicles

Dinesh Cyril Selvaraj, Falko Dressler and Carla Fabiana Chiasserini

* On the Impact of Overcoming Wake-up Radio Limitations on the Performance of Energy Aware Routing in Wireless Sensor Networks

Abhimanyu V. Sheshashayee, Chiara Petrioli and Stefano Basagni

* Unlocking Efficiency in B5G Networks: The Need for Adaptive Service Function Chains

David Perez Abreu, Karima Velasque†, Marilia Curado and Edmundo Monteiro

## 19:00-21:30

#### Conference Baquet

#### July 31 (Wednesday)

## 8:30-9:30

#### Keynote III: Neural Feature Learning for Engineering Problems

Speaker: Prof. Lizhong Zheng, MIT

Chair: Prof. Krishna Kant, Temple University, USA

**9:30 – 10:00 Coffee break**

## 10:00-12:00

**Session 13: IoT and Cyber-Physical Systems**

Chair: Karima Velasquez, University of Coimbra (Portugal)

* Content Caching Optimization Based on Improved Bandit Learning Algorithm

Li Miao, Qiu Siyi, Liu Jiong and Song Wenping

* Data Augmentation for Human Activity Recognition via Condition Space Interpolation within a Generative Model

Tianshi Wang, Yizhuo Chen, Qikai Yang, Dachun Sun, Ruijie Wang, Jinyang Li, Tomoyoshi Kimura and Tarek Abdelzaher

* Super-resolution Localization and Tracking in WiFi Sensing

Jian Wang, Jack Chuang, Sebastian Semper and Nada Golmie

* Intelligent Trajectory-based Approach to UAV Location Integrity Checks

Mincheol Shin, Sang-Yoon Chang, Jonghyun Kim, Kyungmin Park and Jinoh Kim

* Multihop Time Correlated Data Collection in Energy Harvesting Sensor Networks

Gerrit Maurice Willemsen, Sujay Narayana and Rangarao Venkatesha Prasad

* KESIC: Kerberos Extensions for Smart, IoT and CPS Devices

Renascence Tarafder Prapty, Sashidhar Jakkamsetti and Gene Tsudik

#### Session 14: Invited Talks 5

Chair: Simone Silvestri, University of Kentucky (USA)

* Enhancing Capacity of Optical Circuit Switching Clos Network in Data Center: Progress and Challenges

Eiji Oki, Haruto Taka and Takeru Inoue

* Networking Experiments in the Keio Future Photonic Network Open Laboratory with Field-installed Hollow-Core Optical Fiber Cables

Satoru Okamoto

* Acies-OS: A Content-Centric Platform for Edge AI Twinning and Orchestration

Jinyang Li, Yizhuo Chen, Tomoyoshi Kimura, Tianshi Wang, Ruijie Wang, Denizhan Kara, Yigong Hu, Li Wu, Walid A. Hanafy, Abel Souza, Prashant Shenoy, Maggie Wigness, Joydeep Bhattacharyya, Jae Kim, Guijun Wang, Greg Kimberly, Josh Eckhardt, Denis Osipychev and Tarek Abdelzaher

* Clearing Clouds from the Horizon: Latency Characterization of Public Cloud Service Platforms

Rita Ingabire, Antonio Bazco-Nogueras, Vincenzo Mancuso, Luis M. Contreras and Jesus Folgueira

* A MECApp-aware Lifecycle Management Approach in 5G Edge-Cloud Deployments

Paolo Bellavista, Armir Bujari, Luca Foschini, Andrea Sabbioni and Riccardo Venanzi

**12:00 – 13:30 Lunch break**

## 13:30-15:00

#### Poster Session:

Chair: Riccardo Venanzi, University of Bologna (Italy)

* Poster: Embedded-Based Differentiated Communication for Remote ECG Monitoring with a Multi-Level Blockchain System

Chathumi Samaraweera, Adarsha Bhattarai, Dongming Peng and Yutong Liu

* Downlink STBC-GSSK and STBC-UAV Assisted NOMA for 6G and Beyond

Anindya Bal, Sumit Chowdhury and Haofan Cai

* Securing the IoT Ecosystem with Explainable AI-Enhanced Intrusion Detection

Atul Ahire and Geethapriya Thamilarasu

* Implementation and Performance Measurement of the SUHDSA(Secure, Useful, and High-performance Data-Stream Anonymization)+ Algorithm

Jiyeon Lee and Soonseok Kim

* The Remote Networking Lab Manager

Marek Michalski

* Switching Fabric Internal State Analyzer

Marek Michalski

* The Hardware and Software Test Bed for MPTCP

Marek Michalski

* Hardware Simulation of Multi-Service Queues

Joanna Weissenberg and Marek Michalski

* ViEdge: An Edge-based Platform for Video Analytics Applications in Smart Estates

Vishal Choudhary, Rahul Agrawal and Hockbeng Lim

* Private Set Intersection Protocol with Perfect Hashing on OKVS: An Enhanced Approach for Privacy-Preserving Operations

Lee Jiyeon

* Advanced DDoS Attack Classification using Ensemble Model with Meta-Learner

Ankith Indra Kumar and Genya Ishigaki

**ICCCN 2024 Workshop Program Overview**

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| --- | --- | --- | --- | --- |
| **July 31, 2024 - Workshops** | | | | |
| 10:00 - 12:00 | Meeting Room Keauhou III  ISCC-IoT (7) | Meeting Room  Keauhou IV    BDMLN (7) |  |  |
| 12:00 – 13:30 | Lunch break (lunch is not provided) | | | |
| 13:30 - 15:00 | Meeting Room Keauhou I  COHERENT (4) | Meeting Room  Keauhou II    SmartCityCom (3) |  |  |
| 15:00 - 15:30 | Coffee break | | | |
| 15:30 - 17:30 | Meeting Room Keauhou I  BDSSN I (5) | Meeting Room  Keauhou II  AIECN I (5) | Meeting Room  Keauhou III  IoTSPT (5) | Meeting Room Keauhou IV  BDSSN II+AIECN II (3+2) |

### ISCC-IoT Workshop (RM: Keauhou III)

Chair**:** Jian Wang (National Institute of Standards Technology), Guobin Xu, (Morgan State University)

##### **10:00 – 12:00**

#### ISCC- IoT:

Session Chair: Jian Wang (National Institute of Standards Technology)

* A Cost-Effective Long-Distance Industrial IoT System

Guoping Wang (Purdue University Fort Wayne)

* QATFP-YOLO: Optimizing Object Detection on Non-GPU Devices with YOLO Using Quantization-Aware Training and Filter Pruning

Gift Idama, Yifan Guo, Wei Yu (Towson University)

* Performance Analysis of HFrFT Based on Wigner Transform for ISAC Applications

Mohammad Reza Mousavi, Stephan Ludwig (Aalen University)

* An Exploration of Graph Transformer-Driven Deep Learning Techniques on Malware Detection

Hengshuo Liang, Qianlong Wang, Yifan Guo, Adamu Hussaini, Chao Lu, Wei Yu (Towson University)

* Privacy-Preserving Group Closeness Maximization

Zihao Zhao, Sijia Cao, Hanlin Zhang (Qingdao University), Jie Lin (Xi’an Jiaotong University), Fanyu Kong (Shandong University), Leyun Yu (JIC IOT CO., LTD)

* Leveraging Blockchain and Coded Computing for Secure Edge Collaborate Learning in Industrial IoT

Yuliang Chen, Xi Lin, Hansong Xu ((Shanghai Jiao Tong University), Siyi Liao (China United Network Communication Co., Ltd), Jin Guo (Morgan State University)

* Areo-LLM: A Distributed Framework for Secure UAV Communication and Intelligent Decision-Making

Balakrishnan Dharmalingam, Brett Piggott, Guohuan Feng, Rajdeep Mukherjee, Anyi Liu (Oakland University)

**BDMLN Workshop (RM: Keauhou IV)**

Chair: Nahid Majd, (California State University San Marcos)

**10:00 – 12:00**

#### BDMLN:

##### Session Chair: Nahid Majd, (California State University San Marcos)

* Edge Computing Network Intrusion Detection System in IoT Using Deep Learning

Andres Hinojosa, Nahid Ebrahimi Majd (California State University San Marcos)

* Neural Network-based Blocking Prediction for Dynamic Network Slicing

Nitin Datta Movva, Genya Ishigaki (San Jose State University)

* Network Data Complexity and Its Impact on Machine Learning Performance

Alexis Huante, Mustafa Al Lail (Texas A&M International University)

* Scaling Container Caching to Larger Networks with Multi-Agent Reinforcement Learning

Austin Chen, Genya Ishigaki (San Jose State University)

* Beyond Traditional Methods: Deep Learning with Data Augmentation for Robust Access Control

Mustafa Al Lail, Daniela Pinto, Luis Alvarez Almanza, Francisco Salazar, Carolina Rizzi (Texas A&M International University)

* Uncertainty-Aware Forecasting of Computational Load in MECs Using Distributed Machine Learning: A Tokyo Case Study

Phil Aupke (Karlstad University), Akihiro Nakao (University of Tokyo), Andreas Kassler (Karlstad University)

* Channel Estimation for MIMO-OTFS Satellite Communication: a Deep Learning-Based Approach

Yuan Gao, Xinchen Xu (Shanghai University), Bintao Hu (Xi’an Jiaotong-Liverpool University), Jianbo Du (Xi’an University of Posts and Telecommunications), Wenrui Yang (CTTIC Smart Data Co.,Ltd.), Yanliang Jin (Shanghai University)

**12:00 – 13:30 Lunch break**

### COHERENT Workshop

### (RM: Keauhou I)

Chair: Francesco Tusa (University of Westminster), Stuart Clayman (University College London)

##### **13:30 – 15:00**

#### COHERENT:

##### Session Chair: Francesco Tusa (University of Westminster)

* Sharing Stateless Containers among MEC Applications Composed of Multiple Containers

Shuntaro Yanagisawa, Kohki Yamada, Atsushi Sekiguchi (Keio University), Takao Kondo (Hokkaido University), Ken Kumakura, Keisuke Maesako, Liang Zhang (SoftBank Corp.), Kosuke Mori, Fumio Teraoka (Keio University)

* ECO: Edge Continuum Orchestrator Framework for managing serverless chains across the Cloud-Edge Spectrum

Muhamed Alarbi (University of Western Ontario), Robert Belson (Amazon Web Services), Hanan Lutfiyya (University of Western Ontario)

* Trusting the Cloud-Native Edge: Remotely Attested Kubernetes Workers

Jordi Thijsman, Merlijn Sebrechts, Filip De Turck, Bruno Volckaert ((Ghent University - imec))

* DeePref: Deep Reinforcement Learning For Video Prefetching In Content Delivery Networks

Nawras Alkassab, Chin-Tser Huang (University of South Carolina), Tania Lorido Botran (Roblox)

**SmartCityCom Workshop (RM: Keauhou II)**

Chair: Shuhui Yang,(Purdue University Northwest), Besma Smida (University of Illinois at Chicago)

**13:30 – 15:00**

#### SmartCityCom:

##### Session Chair: Besma Smida (University of Illinois at Chicago)

* CoWiL: Combating Cross-Technology Interference in LoRaWAN

Chenglong Shao, Kazuya Tsukamoto (Kyushu Institute of Technology), Yi-Wei Ma (National Taiwan University of Science and Technology), Yingbo Hua (University of California, Riverside), Xianpeng Wang (Hainan University)

* A Physical WiFi Sensing Testbed for Smart Edge Sensing and Computing

Jianchao Song, Yifan Guo, Chao Lu, Wei Yu (Towson University)

* Hybrid LoRa Network Architecture: Automatic Switching between LoRaWAN and LoRa Mesh Network in Environments with Dynamic Obstacle Variations

Hyungsub Kim (Sangmyung University), Hayoung Kim (Soongsil University), Somi Baek (Kyonggi University), Ryan Melenchuk, Jaden Soroka, Anthony Smith (Purdue University)

**15:00 – 15:30 Coffee break**

### BDSSN Workshop (RM: Keauhou I)

Chair**:** Hanlin Zhang (Qingdao University), Hansong Xu (Shanghai Jiaotong University)

**15:30 – 17:30**

##### **BDSSN I:**

Session Chair: Hanlin Zhang (Qingdao University)

* A Distortion Free Watermark Scheme for Relational Databases

Jiang Han (Institute of Software Chinese Academy of Sciences), Xiaowei Peng (Cryptography and Cyberspace Security (Whampoa) Academ), Hequn Xian (Qingdao University), Dalin Yang (Qingdao University)

* Securing Federated Learning: Enhancing Defense Mechanisms against Poisoning Attacks

Benjamin Birchman, Geethapriya Thamilarasu (University of Washington Bothell)

* Data Security Approaches to Support Open Science on High-Performance Computing Systems

Md Kamal Hossain Chowdhury, Purushotham Bangalore (The University of Alabama)

* Digital Twin based Internet of Vehicles

Cheng Qian (Hood College), Mian Qian (Towson University), Kun Hua (California Polytechnic State University), Hengshuo Liang (Towson University), Guobin Xu (Morgan State University), Wei Yu (Towson University)

* Big Data Quality Scoring for Structured Data Using MapReduce

Yalong Wu, Shalini Dhamodharan, Vinuthna Ghattamaneni, Narmada Kokila, Chandrika Pathakamuri, Timothy Carter (University of Houston-Clear Lake), Pu Tian (Stockton University), Kewei Sha (University of North Texas)

**AIECN Workshop (RM: Keauhou II)**

Chair**:** Bintao Hu (Xi’an Jiaotong-Liverpool University), Yuan Gao (Shanghai University)

**15:30 – 17:30**

#### AIECN I:

Session Chair: Bintao Hu (Xi’an Jiaotong-Liverpool University)

* Markovian Analysis of Information Cascades with Fake Agents

Yuming Han (Northwestern University), Bintao Hu (Xi’an Jiaotong-Liverpool University), Jianbo Du (Xi'an University of Posts and Telecommunications)

* Active Collaboration in IoT: Cognitive-agent Oriented Resource-centric Architecture

Yuji Dong, Shiyao Zhang, Xueyan Yao, Jie Zhang, Sida Huang, Yue Li (Xi'an Jiaotong Liverpool University)

* Web3.0 Literary Landscape: Deep Learning and Blockchain for Nobel Prize Predictions

Sida Huang, Jialuoyi Tan, Yuji Dong, Jie Zhang (Xi an Jiaotong-Liverpool University)

* Decentralized Multi-agent Reinforcement Learning for Large-scale Mobile Wireless Sensor Network Control Using Mean Field Games

Zejian Zhou (University of Wyoming), Lijun Qian (Prairie View A&M University), Hao Xu (University of Nevada, Reno)

* Exploring Similarity-Based Graph Compression for Efficient Network Analysis and Embedding

Hamdi Selim Akin, Mehmet Emin Aktas, Muhammad Ifte Islam, Tanvir Hossain, Esra Akbas (Georgia State University)

### IoTSPT Workshop (RM: Keauhou III)

Chair: Geethapriya Thamilarasu, University of Washington Bothell

**15:30 – 17:30**

#### IoTSPT:

##### Session Chair: Geethapriya Thamilarasu, University of Washington Bothell

* SHPAC: Fine-grained and Multi-platform Supported Access Control System for Smart Home Scenario

Yiyu Yang and Yuqing Zhang (School of Computer Science and Technology, University of Chinese Academy of Sciences)

* Towards Protecting On-Device Machine Learning with RISC-V based Multi-Enclave TEE

Yongzhi Wang, Venkata Boggaram (Texas A&M University-Corpus Christi)

* LibGuard: Protecting Sensitive Data In Third-Party Libraries From XLDH Attacks

Fannv He, Jice Wang, Yuhang Huang, Xiancui Peng, Yuqing Zhang (University of Chinese Academy of Sciences)

* Enhancing IoT Security with Context-Aware RBAC in Cloud Architectures

Marshal Moncivais, Mustafa Al Lail (Texas A&M International University)

* Predicting F1-Scores of Classifiers in Network Intrusion Detection Systems

Priscila Silva, Gaspard Baye, Alexandre Broggi (University of Massachusetts Dartmouth), Nathaniel Bastian (United States Military Academy), Gokhan Kul, Lance Fiondella (University of Massachusetts Dartmouth)

### BDSSN+AIECN Workshops (RM: Keauhou IV)

Chair**:** Hanlin Zhang (Qingdao University), Hansong Xu (Shanghai Jiaotong University)

**15:30 – 17:30**

#### BDSSN II + AIECN II:

Session Chair: Yuan Gao (Shanghai University)

* A Transformer-Based Text Similarity Search Model for Hotline System

Changheng Shao, Fengjing Shao (Qingdao University), Xin Liu, Dawei Yang (China University of Petroleum), Rencheng Sun (Qingdao University)

* Location Privacy Protection Method with Route Constraints

Jiang Han (Institute of Software Chinese Academy of Sciences), Hequn Xian (Qingdao University), Dalin Yang (Washington University), Han Jiang (Qingdao University)

* Privacy-Preserving Edge Assistance for Solving Matrix Eigenvalue Problem

Xiaotong Zhao, Hanlin Zhang (Qingdao University), Jie Lin (Xi’an Jiaotong University), Fanyu Kong (Shandong University), Leyun Yu (JIC IOT CO.,LTD)

* Design of Polarization-Reconfigurable Metasurface-Structured Antenna

Wenzhang Zhang, Jingchen Wang, Di Zhang, Shenhong Wang, Jasmine Kah Phooi Seng, Hengyan Liu (Xi'an Jiaotong-Liverpool University)

* Multimodal Frequeny Spectrum Fusion Schema for RGB-T Image Semantic Segmentation

Hengyan Liu, Wenzhang Zhang (Xi’an Jiaotong-Liverpool University), Tianhong Dai (University of Aberdeen), Longfei Yin, Guangyu Ren (Imperial College London)

**Closing**

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