

Wednesday, August 21

Wednesday, August 21 11:20 - 12:20

Comm1: Next Generation (XG) Wireless ↗

Room: DSB C116

Chair: Steven D Blostein (Queen's University, Canada)

Power Consumption Optimization in 5G/6G mmWave Networks with User Multi-Connectivity

Abdulhalim Fayad and Tibor Cinkler (Budapest University of Technology and Economics, Hungary)

User Clustering and Hybrid Precoding Design for mm-Wave Multi-User Massive MIMO Systems

Majid H Khoshafa (McMaster University, Canada); Steven D Blostein (Queen's University, Canada)

Cooperative NOMA Aided Improved Connectivity in Downlink through Smart User Pairing

Twinkle Bhavsar and Abhishek Jindal (Dhirubhai Ambani Institute of Information and Communication Technology, India)

SP1: Machine learning for data analysis ↗

Room: DSB C118

Chair: Xiaodai Dong (University of Victoria, Canada)

On Developing a Robust Filtered-Reference RLS Algorithm and its Application for ANC Systems Targeting Impulsive Noise Sources

Muhammad Tahir Akhtar (Nazarbayev University, Kazakhstan)

Efficient Segmentation for Large-Scale Filtering Based on Overlap-Save Method

Alireza Vosoughi Rad, Abbas Abolfathimontaz, Mahyar Karami and Masoud Ardakani (University of Alberta, Canada); Hamid Ebrahimzad (Huawei Technologies, Canada)

Learning-based Ultra-Wideband Indoor NLOS Identification

Baojun Hu, Xin Li and Xiaodai Dong (University of Victoria, Canada)

Wednesday, August 21 1:30 - 2:50

Comp1: Hardware Acceleration ↗

Room: DSB C116

Chair: Zhenman Fang (Simon Fraser University, Canada)

HiTC: High-Performance Triangle Counting on HBM-Equipped FPGAs using HLS 

Junzhe Liang, Manoj Bheemasandra Rajashekar, Xingyu Tian and Zhenman Fang (Simon Fraser University, Canada)

A New Carry Look-Ahead Adder Architecture Enabling Improved Speed and Energy Efficiency 

Padmanabhan Balasubramanian and Douglas Maskell (Nanyang Technological University, Singapore)

HDL Code Variation: Impact on FPGA Performance Metrics and CAD Tools 

Ian D. Atwell and Darshika G Perera (University of Colorado Colorado Springs, USA)

Discrepancy in Execution Time: Static Vs. Dynamic Reconfigurable Hardware 

Darshika G Perera (University of Colorado Colorado Springs, USA); Kin Fun Li (University of Victoria, Canada)

Comm2: Machine Learning for Wireless ↗

Room: DSB C118

Chair: Lin Cai (University of Victoria, Canada)

A Deep Reinforcement Learning-based Adaptive Transmission Design for Trustworthy URLLC Support in 5G and Beyond Wireless Systems 

Hong-Chuan Yang and Negin Sadat Saatchi (University of Victoria, Canada)

Reliable and Energy-Efficient Relay Transmission in WBANs with Wireless Power Transfer: Optimal Design with DRL 

Shuang Li (University of Victoria, Canada); Fang Xu (Southwest University, China); Hong-Chuan Yang (University of Victoria, Canada)

Swapping Algorithms for Combinatorial Optimization of QAM Constellation Labels 

Brett Wiens and Daniel Lee (Simon Fraser University, Canada)

Wednesday, August 21 3:10 - 4:30

SP2: Signal Processing Theory and Methods ↗

Room: DSB C116

Chair: Michael McGuire (University of Victoria, Canada)

Cross-Attention Dual-Stream Fusion for Speech Emotion Recognition

Shaode Yu, Jiajian Meng and Bing Zhu (Communication University of China, China); Qiurui Sun (Beijing Normal University, China)

Weighted Singular Value Thresholding and Gradient Optimization of Unbiased Risk Estimate for Rank Estimation in Automatic Music Transcription

Bauyrzhan Kurmangaliyev and Muhammad Tahir Akhtar (Nazarbayev University, Kazakhstan)

Anomaly detection in uncharted ship-borne field buses - A case study

Thomas Mundt, Marvin Davieds, Richard Dabels, Noah Garkisch and M A Al-Mamun (University of Rostock, Germany)

An Electrodermal Signal measured Pattern Recognition Algorithm to assess Cognitive Load during Gaming

Salman Md Khan and Swati Pal (Indian Institute of Technology, Bombay, India)

Comp2: Software Systems ↗

Room: DSB C118

Chair: Stephen W Neville (University of Victoria, Canada)

Exploring Emerging Industry Trends for Large-scale Software System Performance Predictability: \newline The Role of Apache and Xen

Zahra Nikdel and Stephen W Neville (University of Victoria, Canada)

An Analysis of Library Usage in the C++ Code Base of Fedora Linux 37

Jiachao Deng and Michael D. Adams (University of Victoria, Canada)

On the Impact of Reliable Protocols on Run-time Software System Performance Predictability

Zahra Nikdel and Stephen W Neville (University of Victoria, Canada)

Conflict Handling Strategies for Partially Ordered Access Control Security Policies

Ahmed Laouar (Centre de Recherche en Informatique de Lens (CRIL), France); Sihem Belabbes (LIASD, IUT de Montreuil, Université Paris 8, France); Salem Benferhat (CRIL, France)

Thursday, August 22

Thursday, August 22 1:30 - 2:50

Comp3: Machine Learning ↕

Room: DSB C116

Chair: JingTao Yao (University of Regina, Canada)

Continual Federated Learning for Dynamic Data

JingTao Yao and Akshat Sharma (University of Regina, Canada)

Modeling equivariant neural networks for hardware acceleration, a case study on the molecular docking tool DiffDock

Shidi Tang and Xingxing Zhou (Southeast University, China); Ming Ling (National ASIC System Engineering Technology Research Center, China)

Memory Feature Engineering for Performance-Gain in Obfuscated Malware Detection Using Machine Learning and Sensitivity Analysis

Diogo Oliveira (Penn State University, USA); Richard Lomotey and Madhurima Ray (Pennsylvania State University, USA); Mohamed Rahouti (Fordham University, USA)

Improved Semi-supervised Attention GAN for Semantic Segmentation

Nusrat Jahan and Thangarajah Akilan (Lakehead University, Canada); Thanh Minh Nguyen (Biospective, Inc., Canada)

Comm3: Non-Terrestrial Communications ↕

Room: DSB C118

Chair: Kui Wu (University of Victoria, Canada)

Fairness-Aware Beam Placement Scheduling for LEO Satellites

Pooria Seyed Eftetahi, Lin Cai and Amir Sepahi (University of Victoria, Canada)

On the Outage of Far-Reach Communications via RIS-Empowered Satellites

Fan Wang and Ruihong Jiang (Beijing University of Posts and Telecommunications, China); Yuan Liu (Zhejiang Laboratory, China); Tingnan Bao (University of Ottawa, Canada); Mugen Peng (Beijing University of posts & Telecommunications, China)

Multipath TCP Video Streaming Hand-Offs on LEO Satellite/5G Cellular Networks

Yosuke Komatsu (Kyushu Institute of Technology, Japan); Dirceu Cavendish (NEC USA, USA); Daiki Nobayashi and Takeshi Ikenaga (Kyushu Institute of Technology, Japan)

Securing the Unprotected: Enhancing Heartbeat Messaging for MAVLink UAV Communications 

Isabel Hughes, Adriel Pupo, Jenna Wynd, Zachary Thurlow, Connor Ivancik and Ying Wang (Stevens Institute of Technology, USA)

Thursday, August 22 3:10 - 4:30

Comp4: Data Mining and Analysis 

Room: DSB C116

Chair: Kin Choong Yow (University of Regina, Canada)

Temporal Analysis of Oceanographic Data: Insights into Environmental Variability and Trends 

Rudra Pratap Singh, Bhan Singh and Navneet Popli (University of Victoria, Canada); Mohammad Mamun (National Research Council Canada, Canada)

Quantifying Spatial Data Uncertainty with Fuzzy Entropy

Zhonghao Zhang and Caterina Valeo (University of Victoria, Canada)

A Novel Computational Method to Find Tumour Nuclei Traits Predictive of Breast Tumour Malignancy Using Machine Learning 

Aditi Srinivasan (University of British Columbia, Canada & Queen's University, Canada); Samantha Tapping (Western University, Canada); Lydia Elbatarny (University of British Columbia, Canada & Queen's University, Canada)

Human Fall Detection Based on ResNet and LSTM Network in Surveillance Cameras 

Xinyu Liu and Kin Choong Yow (University of Regina, Canada)

SP3: Signal Processing for Communications 

Room: DSB C118

Chair: Ramy Gohary (Carleton University, Canada)

The Design and Implementation of the Very Coarse Channelizer for the ALMA 2030 Wideband Sensitivity Upgrade 

Thushara Gunaratne (National Research Council Canada, Canada)

Learning-based Ultra-Wideband Indoor Ranging

Xin Li, Baojun Hu and Xiaodai Dong (University of Victoria, Canada)

Optimal Detection in Barrage-Jammed Single-Input Double-Output Systems 

Khalid Almahrog (Carleton UNiversity, Canada); Ramy Gohary (Carleton University, Canada)

Convolved Frequency-Selective Surface with Reconfigurable Response 

Thayuan Rolim de Sousa (IFPB, Brazil); Deisy Mamedes (National Research Council, Canada); Valdemir Praxedes da Silva Neto (Federal University of Rio Grande do Norte, Brazil); Alfrêdo Gomes Neto (Federal Institute of Paraíba & Grupo de Telecomunicações e Eletromagnetismo Aplicado - GTEMA, Brazil)

Friday, August 23

Friday, August 23 10:00 - 11:20

SP4: Computer Vision 

Room: DSB C116

Chair: David W. Capson (University of Victoria, Canada)

Combining SIFT and BRISK descriptors to improve image matching accuracy 

Sina Ghaffari, Kin Fun Li and David W. Capson (University of Victoria, Canada)

Using Texture to Classify Forests Separately from Vegetation 

David R Treadwell IV (Northeastern University, USA); Derek Jacoby (University of Victoria & QVirt Labs, Canada); Will Parkinson (EartDaily Analytics, Canada); Bruce Maxwell (Northeastern University, USA); Yvonne Coady (University of Victoria, Canada)

Motion Capture Technology for Enhancing Live Dance Performances 

Sofia Khutorna and Yvonne Coady (University of Victoria, Canada); Derek Jacoby (University of Victoria & QVirt Labs, Canada); Anthony Estey (University of Victoria, Canada)

Multi-Resolution Subspace Reconstruction through Density Measure - Application to Image Processing 

Mohammadreza Robaei (University of Tabriz, Iran)

Comm4: Mobile and Data Networks 

Room: DSB C118

Chair: Jianping Pan (University of Victoria, Canada)

Fairness Improvement of Different TCP Congestion Control Algorithms Using P4 Programmable Data Plane 

Koshi Ono, Daiki Nobayashi and Takeshi Ikenaga (Kyushu Institute of Technology, Japan)

Innovative Approaches to Interference Protection in Next-Gen Wireless Networks 

Colin Brown and Chaitanya Parekh (Communications Research Centre, Canada); Humphrey Rutagemwa (Communications Research Centre (CRC), Canada)

MEC Collaborative Function Retention System using WebAssembly for Floating-CPS 

Meiya Tanaka, Daiki Nobayashi, Kazuya Tsukamoto and Takeshi Ikenaga (Kyushu Institute of Technology, Japan); Shu Sekigawa (KDDI Research, Inc., Japan); Myung Lee (CUNY, City College, USA)

Performance Evaluation of Dynamic Transmission Parameter Control Method for Mobile Terminal with 920 MHz LoRa Communication 

Rikuto Tanaka, Daiki Nobayashi, Kazuya Tsukamoto and Takeshi Ikenaga (Kyushu Institute of Technology, Japan); Goshi Sato (NICT, Japan); Kenichi Takizawa (National Institute of Information and Communications Technology, Japan)

Friday, August 23 11:40 - 12:40

Comp5: LLMs and Their Applications

Room: DSB C116

Chair: Humphrey Rutagemwa (Communications Research Centre (CRC), Canada)

Accelerating Regulatory Processes with Large Language Models: A Spectrum Management Case Study 

Humphrey Rutagemwa (Communications Research Centre (CRC), Canada); Lydia Odilinye (Innovation, Science and Economic Development Canada, Canada); Dania Mahmoud (Carleton University, Canada)

Detecting Unintended Changes of AI Character Personality on Large Language Models 

Hiromu Hatsuno, Kaede Shitara, Tomoya Sato and Kosuke Takano (Kanagawa Institute of Technology, Japan)

Exploiting LLM Embeddings for Content-Based IoT Anomaly Detection 

Tianming Wang, Zhengan Zhao and Kui Wu (University of Victoria, Canada)

Comm5: THz and Visible Light Communications

Room: DSB C118

Chair: Levi Smith (University of Victoria, Canada)

A THz Spoof Surface Plasmon Polariton Band Pass Filter for 6G Communication Applications

Mohsen Haghghat (University of Victoria & CAMTEC, Canada); Thomas E Darcie and Levi Smith (University of Victoria, Canada)

Ambient Light Effects on Outdoor Visible Light Communication

Sayeed Ahmed and Tet Yeap (University of Ottawa, Canada); Mohammad Salim Ahmed (University of North Texas, USA)