time	Conference rooms				
	Lunenberg	Bedford	Maritime	Northumberland	As Indicated
MON	**AM COFFEE BREAK (9:45 – 10:15)**				
MONDAY 10:15 – 11:55	TS-01 **Coms, Electronics – Radar** [S. Rajan] **10:15:** *An Enhanced (Margin-Based) Quantum Annealing Approach to Phase-Unwrap SAR Images* **10:35:** 3D Printed X-Band Orthomode Transducer and Conical Waveguide Horn Antenna **10:55:** Classifying Linear Frequency Modulated Radar Signals Using Matched Filters **11:15:** FPGA-Based Designs of the Factorial Function		TS-03 **Cyberphysical Systems – Sensing & IoT** [K. Svendsen] **10:15:** *Scan Context 3D Lidar Inertial Odometry via Iterated ESKF and Incremental K-Dimensional Tree* **10:35:** Early Results and Description of an Underwater Electric-Field Sensing and Communication Experiment in Bedford Basin **10:55:** Dense Reconstruction from Visual SLAM with Probabilistic Multi-Sequence Merging **11:15:** Virtual Sensor Middleware: Managing IoT Data for the Fog-Cloud Platform **11:35:** Coordinated Outage Approach for IoT Physical-Layer Security Against Eavesdropping	TS-04 **Renewables Forecasting & Management** [H. Aly] **10:15:** Machine Learning-Based Condition Monitoring of Solar Photovoltaic Systems: A Review **10:35:** Very Short-Term PV Power Prediction Using Machine Learning Models **10:55:** Optimal Power Management for the Integrated Multiple Energy Carrier System **11:15:** Investigating the Impact of Increasing Renewable Energy Penetration Levels on the Accuracy of Net Load Forecasting **11:35:** Nonparametric Maximum Likelihood Probabilistic Photovoltaic Power Generation Forecasting Based on Spatial-Temporal DL	Panel 1: Industry Panel (N. El-Sherif) **Atlantic Ballroom**
	MON LUNCH (11:55 – 13:15)				
MONDAY 13:15-14:55	TS-05 **Coms, Electronics – Powering & Energy** [A. Bassam] **13:15:** Return on Investment Evaluation and Optimal Sizing of Behind-The-Meter Battery Energy Storage Systems in Large Commercial Buildings in Ontario **13:35:** Energy Analysis in Single Cluster WSNs with Power Control and In-Network Dat13:55: Quadrature Phasing in Dickson-Pelliconi and Heap Charge Pumps with Improved Performancea Compression **13:55:** Quadrature Phasing in Dickson-Pelliconi and Heap Charge Pumps with Improved Performance	TS-06 **AI and Machine Learning – Applications 1** [E. Gregson] **13:15:** Label-Free Monitoring of Self-Supervised Learning Progress **13:35:** AI-Based Classification to Facilitate Preservation of British Columbia Endangered Birds Spe **13:55:** UAV Based Smart Bird Control Using Convolutional Neural Networks **14:15:** Deep Learning Application to Handwritten Arabic Words Recognition	**TS-07 Cyberphysical Systems - Robotics** [K. Svendsen] **13:15:** Towards Consistent Visual-Inertial Navigation for Unmanned Aerial Vehicles Using Depth Information **13:35:** Assistive Robots for Long COVID and ME/CFS Support: Challenges and Opportunities **13:55:** Autonomous Recovery of Underway AUV on the Water Surface in Heavy Seas **14:15:** LMI Based Stability Analysis of State Convergence Architecture for Bilateral Teleoperation Systems **14:35:** Automated Generation and Integration of AUTOSAR RTE Configurations	TS-08 **Renwables Power Quality and Microgrid** [H. Aly] **13:15:** A Comparative Study on Solar-Based Multilevel Inverters as A Substitute for Existing OLTCs **13:35:** Real-Time Wavelet-Based Data Compression in Light of IEC61850 Communication Protocol **13:55:** Smart Grid Data Compression of Power Quality Events Using Wavelet Transform **14:15:** A Proposed Adaptive Filter for Harmonics Mitigation Based on Adaptive Neuro Fuzzy Inference System Model for Hybrid Wind Solar Energy System	Panel 2: Equity, Diversity and Inclusion Panel (A. Aghdam) **Atlantic Ballroom**

time	Conference rooms				
	Lunenberg	Bedford	Maritime	Northumberland	As Indicated
	PM COFFEE BREAK (14:55 – 15:20)				
MONDAY 15:20 – 17:00	TS-09 **Coms, Electronics – Electronics** [A. Bassam] **15:20:** A 5.56GHz Single Core Digitally-Controlled Oscillator with Direct Fine Tuning Steps of 2.85 kHz **15:40:** Using TFM Analysis and Memory Map Calibration for Designing Linear and Monotonic LC DCOs **16:00:** Performance Limits of Gated Delay Line Time Integrator **16:20:** Design of High-Bandwidth, High-DC Gain Single-Stage Amplifier for High-Speed ADCs **16:40:** Linear Time-Varying Causal Systems Transformed	TS-10 **AI and ML – Power & Networking** [E. Gregson] **15:20:** Deep Neural Network Modeling for Accurate Electric Motor Temperature Prediction **15:40:** Early Fault Detection of Medium Voltage Covered Conductors with Deep Learning Method **16:00:** Superiority of the Neural Network Dynamic Regression Models for Ontario Electricity Demand Forecasting **16:20:** AI-Based Traffic Forecasting in 5G Network **16:40:** Time Series Anomaly Detection via Reinforcement Learning-Based Model Selection	TS-11 **Cyberphysical Systems – Electric Grid** [J. Ross] **15:20:** Site Suitability Assessment of Public EV Charging Stations in Urban Environment **15:40:** Impact of the Open Charge Point Protocol Between the Electric Vehicle and the Fast Charging Station on the Cybersecurity of the Smart Grid **16:00:** Agglomerative Hierarchical Clustering with Dynamic Time Warping for Household Load Curve Clustering **16:20:** Cyber-Physical Blockchain Based Secure Platforms for Data and Energy Trading in Multi-Level Electricity Markets **16:40:** An ML-Based Strategy to Identify Insulation Degradation in High Voltage Capacitive Bushings		IMERIT Special Session (Jason Gu) **Atlantic Ballroom**
17:00 - 18:25					YP Mentorship (M. Seto) **Harbour Suites**
TUES	**AM COFFEE BREAK (9:45 – 10: 15)**				
TUESDAY 10:15 – 11:55	TS-13 **Oceans** [B. Armstrong] **10:15:** Deep Learning for Marine Bioacoustics and Fish Classification Using Underwater Sounds **10:35:** Collaborative AUV Localization and Tracking of an Underway Ship with Adaptive Pinging and a Planner for Trilateration **10:55:** Multi-Modal Signal Analysis for Underwater Acoustic Sound Processing **11:15:** An Approach to Choose Observation Systems to Observe Ocean Phenomena	TS-16 **Heart Disease Detection & COVID Models** [L. Zhang] **10:15:** Feature Selection and Machine Learning Model Development for Heart Failure Prediction **10:35:** Modeling and Predicting COVID-19 Infections: The Effect of Incomplete Testing and Recovery Data in the Early Days of the Pandemic **10:55:** Heart Disease Detection Using Back-Propagation Artificial Neural Network **11:15:** Early Detection of Heart Disease Using Advances of Machine Learning for Large-Scale Patient Datasets **11:35:** A Bio-Inspired Neural Network for Modelling COVID-19 Transmission in Canada	TS-15 **Cyberphysical Systems – IoT 2** M. Seto] **10:15:** Development of an IoT Monitoring System for Bridge Bearing Movement Using a MEMS Accelerometer-Based Inclination Sensing **10:35:** Finger Tracking for Human Computer Interface Using Multiple Sensor Data Fusion **10:55:** Cooperative Transmission Strategy for IoT Physical-Layer Security Against Interference Attacks **11:15:** An Energy Harvesting Receiver Utilizing Microstrip Filter Technology for IoT Devices in 5G Network **11:35:** Toward a Coalgebraic Model of Control Programs	TS-14 **Education Panel** [N. El-Sherif] **10:15:** STAR-ML: A Rapid Screening Tool for Assessing Reporting of Machine Learning in Research **10:35:** From Technical Writing Course Assignments to Publications: A Process Review **10:55:** Investigation of Energy Efficiency of Fishing Vessels in the Adriatic Sea by Fuel Consumption Measurements and Catch Analysis: Design and Operation of Data Collection System **11:15:** IoT Enabled Grid Storage System	

time	Conference rooms				
	Lunenberg	Bedford	Maritime	Northumberland	As Indicated
	TUE LUNCH (11:55 – 13:15)				
TUESDAY 13:15 – 14:55	TS-18 **Imagery & Acoustics – Image Provessing** [A. Deeb] **13:15:** A Non Local Multi-Fiber Network for Action Anticipation in Videos **13:35:** Trend Extraction and Visualization of Motor Vehicle Occupant Fatality Rates **13:55:** Whale Optimization Algorithm for Color Image Segmentation Using Supra-Extensive Entropy **14:15:** Hyperspectral Image Classification Based on Gramian Angular Fields Encoding	TS-17 **Health Care Devices & Systems** [E. Kim] **13:15:** RISC-V Based Processor Architecture for an Embedded Visible Light Spectrophotometer **13:35:** Evaluation of a Fabric Sheath Cooling Apparatus for Twisted Coiled Actuators **13:55:** Trust Metrics for Medical Deep Learning Using Explainable-AI Ensemble for Time Series Classification **14:15:** Advancement of Printed Electronics for Use in IoT Applications and Wireless Health Care Devices	TS-19 **Cloud Computing 1** [M. Albin] **13:15:** Continuous Integration and Continuous Delivery Framework for SDS **13:35:** Evaluating the Performance of the Eclipse OpenJ9 JVM JIT Compiler on AArch64 **13:55:** Q-Learning Based Routing in Optical Networks **14:15:** Adaptive Mapping Algorithm for Spectrally-Spatially Flexible Optical Networks	TS-20 **Renewables Integration** [H. Aly] **13:15:** Power System Resiliency Studies Under Renewable Energy Penetration: A Review **13:35:** Battery Energy Storage Technology in Renewable Energy Integration: A Review **13:55:** A Novel Flexible and Scalable Nonintrusive Load Monitoring Approach Using Wavelet Design and Machine Learning	
	PM COFFEE BREAK (14:55 – 15:20)				
TUESDAY 1520 – 17:00	TS-22 **Imagery and Acoustics - Acoustics** [M. Seto] **15:20:** A Discriminant Correntropy Analysis for Multi-Feature Fusion **15:40:** Residual Time-Restricted Self-Attentive TDNN Speaker Embedding for Noisy and Far-Field Conditions **16:00:** Taking Advantage of Power Limits in Momentum RLS Loudspeaker Nonlinear Parameter Estimation **16:20:** Super-Resolution of Audio Files Using Feed-Forward Neural Networks for Music Storage and Transfer	TS-21 **Cyberphysical Systems & Requirements** [A. Deeb] **15:20:** Ultrasound Operator Variance Classification for Agency in Artificial Intelligence Support of Cyber-Physical Systems **15:40:** An Intelligent Methodology to Enhance Requirements Engineering in Multidisciplinary Projects **16:00:** A Priori Quantification of Transfer Learning Performance on Time Series Classification for Cyber-Physical Health Systems	TS-23 **Cloud Computing 2** [M. Albin] **15:20:** Non-Intrusive Load Monitoring Using Machine Learning Acceleratror Hardware for Smart Meters **15:40:** COVID Risk Aversion System: Intelligent Risk Calculation Using Location Tracking and Dynamic Area Assessment **16:00:** Performance Analysis of Vehicular Cloud Under Interruption Avoidance Strategy **16:20:** Optimal Power Allocation Based on Success Probability of SIC Detection in MWRC PNC		