



CTFG 2018

Canadian Tracking and Fusion Group Workshop Technical Program



Day 1: Monday, October 15, 2018

08:00-08:45		Registration
08:45-09:00	Melita Hadzagic (General Co-Chair), OODA Technologies, Steven Horn (General Co-Chair), DRDC CORA	Welcome Speech and Introductory Remarks
09:00-09:45	Invited Speaker: Dale Reding, Director General, Science and Technology Air Force and Navy (DGSTAN), DND Canada	Post-SSE Fusion and Sensing Challenges (Air)
Video Tracking (Chair: Laurence Olivier Marion-Ouellet)		
09:45-10:10	Sarah Babbitt, Tanya Gatsak, Bhashyam Balaji, <i>DRDC Ottawa, Canada</i>	Integrating Image and Video Processing into a Python Library for State Estimation of Modelling
10:10-10:35	Roman Palenychka, Rami Abielmona, <i>Larus Technologies, Canada</i> , Emil Petriu, <i>University of Ottawa, Canada</i>	Attentive Sensing Approach to Object Detection and Tracking in Surveillance Videos
10:35-11:00	Hamidreza Fazlali, Shahram Shirani, <i>McMaster University, Canada</i> , Mike McDonald, <i>DRDC Ottawa, Canada</i> , Thia Kirubarajan, <i>McMaster University, Canada</i>	Cloud/haze Detection in Airborne Videos Using a Convolutional Neural Network
11:00-11:15	Coffee	
Maritime Surveillance (Chair: Melita Hadzagic)		
11:15-11:40	Alexander Teske, <i>University of Ottawa, Canada</i> , Rafael Falcon, Rami Abielmona, <i>Larus Technologies, Canada</i> , Emil Petriu, <i>University of Ottawa, Canada</i>	Extracting Maritime Incidents from Unstructured Articles
11:40-12:05	Ashwin Panchapakesan, <i>University of Ottawa, Canada</i> , Rami Abielmona, <i>Larus Technologies, Canada</i> , Emil Petriu, <i>University of Ottawa, Canada</i>	Predicting Shipping Container Damage in Commercial Maritime Ports through High Level Information Fusion
12:05-12:30	Ibrahim AbuAlhaol, Rafael Falcon, Rami Abielmona, <i>Larus Technologies, Canada</i> , Emil Petriu, <i>University of Ottawa, Canada</i>	Mining Port Congestion Indicators from Big Data
12:30-14:00	Lunch (not provided)	
14:00-14:45	Invited Speaker: Chee-Yee Chong, Independent Consultant, U.S.A.	Forty years of Distributed Filtering
Multitarget Tracking (Chair: Thia Kirubarajan)		
14:45-15:10	Sang Bin Lee, Peter Carniglia, Emilie Altman, Bhashyam Balaji, <i>DRDC Ottawa, Canada</i>	Pystemlib: Implementing Multiple Target Tracking and Application of Software Engineering Practices
15:10-15:35	Song Li, Ratnasingam Tharmarasa, <i>McMaster University, Canada</i> , Dan Brookes, <i>DRDC Ottawa, Canada</i> , Daly Brown, <i>General Dynamics, Canada</i> , Thia Kirubarajan, <i>McMaster University, Canada</i>	3-D Tracking of Non-Cooperative Targets Using a 2-D Radar
15:35-16:00	Bethi Pardhasaradhy, Ratnasingam Tharmarasa, <i>McMaster University, Canada</i> , Bumsoo Kim, Rahim Jassemi, <i>DRDC Ottawa, Canada</i> , Thia Kirubarajan, <i>McMaster University, Canada</i>	GPS Spoofer Attack Detection and Mitigation Using Association and Tracking
16:00-16:25	Daly Brown, John Clarke, <i>General Dynamics Mission Systems, Canada</i> , Mike McDonald, <i>DRDC Ottawa, Canada</i> , Thia Kirubarajan, <i>McMaster University, Canada</i>	Tracking to Learn and Learning to Track
16:25-16:40	Coffee	
Sensor Fusion (Chair: Bhashyam Balaji)		
16:40-17:05	Huai-Jing Du, Fred Dilkes, <i>DRDC Ottawa Canada</i>	Sensor Data Fusion in Passive RF Emitter Detection and Location (U)
17:05-17:30	Jingqun Li, Ratnasingam Tharmarasa, <i>McMaster University, Canada</i> , Daly Brown, <i>General Dynamics, Canada</i> , Thia Kirubarajan, <i>McMaster University, Canada</i>	Efficient Multiframe Assignment for Target Tracking and Sensor Fusion
17:30-17:55	Tongyu Ge, Ratnasingam Tharmarasa, <i>McMaster University, Canada</i> , Bernard Lebel, Mihai Florea, <i>Thales, Canada</i> , Thia Kirubarajan, <i>McMaster University, Canada</i>	Joint multitarget Localization and Multisensor Synchronization for Indoor Localization and Cyber-Security
17:55-18:00		End of Day 1
19:00-22:00		No-Host Dinner



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Day 2: Tuesday, October 16, 2018

09:00-09:45	Invited Speaker: Galina Rogova, Research Professor, State University of New York at Buffalo, U.S.A.	Higher Level Fusion and Situation Management: Challenges and Computational Approaches
High Level Fusion (Chair: Anne-Laure Jouselme)		
09:45-10:10	Steven Horn, <i>DRDC CORA, Canada</i>	Blockchain Applications in Tracking and Fusion
10:10-10:35	Chi-Hong Cheung, Rahim Jassemi-Zargani, <i>DRDC Ottawa, Canada</i>	Target Threat Assessment Based on MCDM Techniques
10:35-11:00	Laurence Olivier Marion-Ouellet, <i>OODA Technologies, Canada</i> , Glenn Franck, Allan Gillis, <i>DRDC Atlantic, Canada</i>	Using Mixed Reality to Enhance the Mission Planning Process
11:00-11:15	Coffee Break	
Hard and Soft Fusion (Chair: Elisa Shahbazian)		
11:15-11:40	Saeed Rostami, Ratnasingam Tharmarasa, <i>McMaster University, Canada</i> , Mike McDonald, <i>DRDC Ottawa, Canada</i> , Mihai Florea, <i>Thales Research & Technology, Canada</i> , Thia Kirubarajan, <i>McMaster University, Canada</i>	Modeling and Simulation of Realistic Soft Data for Surveillance Applications
11:40-12:05	Isabelle Prévost, Olivier Labonté, Éric-Olivier Bossé, Mathieu Lavallée, Melita Hadzagic, Michel Mayrand, Elisa Shahbazian, <i>OODA Technologies, Canada</i> , Nathan Kashyap, <i>DRDC Ottawa, Canada</i>	Reusable Software System Architecture For Soft and Hard Data Fusion
12:05-13:30	Lunch (not provided)	
Resource Management (Chair: Mihai Florea)		
13:30-13:55	Jean Berger, <i>DRDC Valcartier</i> , Nassirou Lo, <i>WARWII Solutions Inc.</i> , Mohamed Barkaoui, <i>Université Laval, Canada</i>	MOSAIC – A Multi-Satellite Collection Scheduling Solution for Large Area Coverage
13:55-14:20	Mahdi Shaghghi, <i>Complementary AI System Corp., Canada</i> , Raviraj Adve, <i>University of Toronto, Canada</i> , Zhen (Jack) Ding, <i>DRDC Ottawa, Canada</i>	Multifunction Cognitive Radar Task Scheduling using Monte Carlo Tree Search and Policy Networks
14:20-14:45	Zhen Qu, Zhen Ding, Peter Moo, <i>DRDC Ottawa, Canada</i>	A Radar Task Scheduling Method Using Random Shifted Start Time with the EST Algorithm
14:45-15:10	Hossein Chahrour, <i>Carleton University/DRDC Ottawa, Canada</i> , Bhashyam Balaji, <i>DRDC Ottawa, Canada</i> , Richard Dansereau, Sreeraman Rajan, <i>Carleton University, Canada</i>	MIMO Radar with Hybrid Spread Spectrum Orthogonal Waveforms for Spectrum Sharing
15:10-15:25	Coffee Break	
Machine Learning/Deep Learning (Chair: Steven Horn)		
15:25-15:50	Mohamed Gaafar, <i>University of Toronto, Canada</i> , Mahdi Shaghghi, <i>Complementary AI System Corp., Canada</i> , Raviraj Adve, <i>University of Toronto, Canada</i> , Zhen (Jack) Ding, <i>DRDC Ottawa, Canada</i>	Reinforcement Learning for Cognitive Radar Resource Management
15:50-16:15	Aristided Milios, Konstantinos Chatzikokolakis, <i>Marrine Traffic, UK</i> , Dimitris Zissis, <i>Marrine Traffic, UK/University of Aegean, Greece</i> , Stan Matwin, <i>Dalhousie University, Canada</i>	Sail ho! A Deep Learning Approach for Ship Detection Which Utilises Complimentary Sensing Capabilities
16:15-16:40	Anne Claire Boury-Brisset, <i>DRDC Valcartier, Canada</i> Mihai Florea, <i>Thales Research & Technology, Canada</i>	Ship Classification Using Deep Learning Techniques for Maritime Target Tracking
16:40-17:05	Moslem Ouled Sgaier, Julian Falardeau, Éric-Olivier Bossé, Isabelle Prévost, Melita Hadzagic, <i>OODA Technologies, Canada</i> , Nathan Kashyap, <i>DRDC Ottawa, Canada</i>	NLP Solutions for Enhanced Maritime Domain Awareness
17:05-17:30	Erik Blasch, <i>Air Force Office of Scientific Research, USA</i> , Shuo Liu, Zheng Liu, <i>University Of British Columbia, Canada</i>	Deep Learning Measures of Effectiveness
17:30-17:45	Melita Hadzagic (General Co-Chair), <i>OODA Technologies</i> , Steven Horn (General Co-Chair), <i>DRDC CORA, Canada</i>	End of Day 2 - Wrap up