

2021 Dynamic Data and Information Processing Program Review

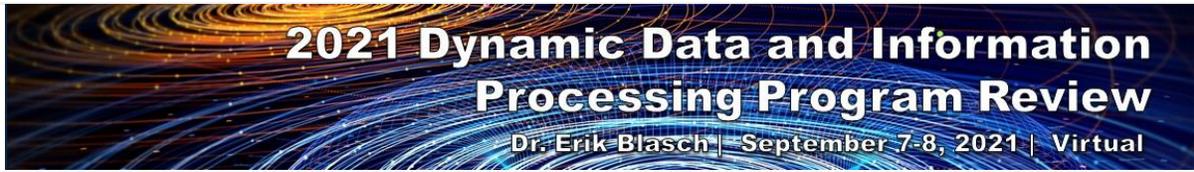
Dr. Erik Blasch | September 7-8, 2021 | Virtual

Agenda Day 1 | Tuesday, September 7, 2021

| Time | Topic | Speaker |
|---|--|-----------------------------------|
| 8:30-9:00 | Zoomgov Login | |
| 9:00 | Status of DDIP/DDDAS | Erik Blasch, AFOSR |
| 9:50 | BREAK | |
| Session: Space Domain Awareness | | |
| 10:05 | Dynamic Data Driven Framework to Fuse Optical and Passive Radar Data for Enhance Space Awareness | Puneet Singla, PSU |
| 10:30 | Dynamic Data Driven Framework to Fuse Optical and Passive Radar Data for Enhance Space Awareness | Ram Narayanan, PSU |
| 10:50 | Ground-Based and Space-Based Data Challenge Problem | Francis Chun, USAFA |
| 11:10 | Event Characterization Fusing Hard and Soft Data via Semantic Models | John Crassidis, Univ. Of Buffalo |
| 11:30 | Development of a Dynamic Data-Driven Uncertainty Quantification Systems | Richard Linares, MIT |
| 11:45 | LUNCH | |
| Session: Multi-Modal Sensor Analysis | | |
| 12:30 | Dynamic Data Driven Multistatic EO/RF Sensor Fusion | Jia Li, Oakland Univ. |
| 12:50 | Dynamic data driven applications systems with multi-modal sensing, collaborative sensing, and deep computing | Jie Wei, City College NY |
| 13:10 | On-the-Fly Topological Formation of UAV Swarms | Joe Camp, SMU |
| 13:30 | Dynamic Data-Driven Autonomous Planning and Communications | Fatemeh Afghah, Clemson |
| 13:50 | Adaptive High Dimensional Data Fusion and Sensing for Dynamic Target Detect | Ruixin Niu, VA Commonwealth Univ. |
| 14:05 | BREAK | |

Session: ISR Sensor Analysis

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| 14:20 | Mathematical and Algorithmic Challenges for Fully Adaptive Radar | Murali Rangaswamy, AFRL |
| 14:40 | Data-Driven Improved Space-Time Adaptive Processing (STAP) Radar | Vahid Tarokh, Duke |
| 15:00 | Integrated 5G Imaging and Communication Surveillance as an Edge Service | Yu Chen, Binghamton |
| 15:20 | Autonomous Systems and Artificial Intelligence Research in Education | Troy Weingart, USAFA |
| 15:40 | Reliable Inference in Dynamic Data Fusion | Peter Willett, UCONN |
| 16:00 | BREAK | |
| Session: State Awareness | | |
| 16:15 | Generative Adversarial Networks (GANs) for Meaning Making and Translation | Todd Rovito, AFRL/RV |
| 16:35 | Unsupervised and Self-Supervised Learning for Image and Video Understanding | Oliver Nina, AFRL/RV |
| 16:55 | Non-convex Optimization Algorithms and Theory for Matrix Factorization with Dynamic Massive Data | Laura Balzano, Michigan |
| 17:10 | Theory and Efficient Algorithms for Dynamic and Robust L1-norm Analysis of | Panos Markopoulos, RIT |
| 17:30 | Data-Driven Adaptive Learning for Video Analytics | Andreas Savakis, RIT |
| 17:50 | High-fidelity scene modeling and vehicle tracking using hyperspectral video | Matthew Hoffman, RIT |
| 18:05 | BREAK | |
| 18:20 | DDDAS Summary | Erik Blasch, AFOSR |



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Agenda Day 2 | Wednesday, September 8, 2021

| Time | Topic | Speaker |
|--------------------------------------|---|---|
| 8:35-9:05 | Zoomgov Login | |
| 9:05 | Status of DDIP/DDDAS | Erik Blasch, AFOSR |
| 9:50 | BREAK | |
| Session: Materials Awareness | | |
| 10:05 | DataFusion For Multi-Scale Mixed Modality Microstructure Characterization | John Wertz, AFRL/RX |
| 10:50 | Intelligent Self-Healing Composite Structure Using Predictive Self-Healing | Sameer Mulani, Univ. Alabama |
| 11:10 | Real-time Model Updating for Structures in Shock Environments | Austin Downey, Univ. South Carolina |
| 11:30 | Multi-layer Surrogate Modeling via Bayesian Approach and Non-Contract Full-Field Measurements | Zhu, Mao, Univ of Lowell |
| 11:45 | LUNCH | |
| Session - State Awareness | | |
| 12:40 | Formal Verification of Stochastic State Awareness for Dynamic Data-Driven Intelligent Aerospace Systems | Fotios Kopsaftopoulos, Rensselaer Polytechnic institute |
| 13:00 | Active Data- A New Paradigm for Data Streaming Analytics | Carlos Varela, Rensselaer Polytechnic institute |
| 13:20 | A Neural-Symbolic approach to Real-time Decision-making in Complex Aerospace Systems | Sarkar Soumik, Iowa State Univ. |
| Session - Situation Awareness | | |
| 13:35 | Query-based Activity Estimation and Policy-Based Optimization (QuaePO) | Alexander Aved, AFRL/RIED |
| 13:55 | Efficient Learning with Human-in-the-Loop in Structured, Noisy and Temporal | Sriraam Natarajan, UT-Dallas |
| 14:15 | Towards Self-Healing Resilient Microgrids Using DDDAS | Jie Xu, George Mason Univ. |
| 14:35 | Dynamic-Data-Driven Monitoring for Resilient Smart Grid Networks | Nurcin Celik, Univ. Miami |

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| 14:55 | BREAK | |
| Session - Cyber Awareness | | |
| 15:10 | Towards a Learning-based Dynamic Data Driven Detection Framework for Unforeseen Cyber Attack | Wei Yu, Towson Univ. |
| 15:30 | Hardening JADC2 to Adversarial Data: Theory, Algorithms and Applications | Tahir Ekin, Texas State Univ. |
| 15:50 | Dynamic Data Driven Explainable Artificial Intelligence For Military Medical Evacuation | Phillip Jenkins, AFIT |
| 16:10 | Adversarial Statistical Decision Theory | William Caballero, AFA |
| 16:25 | BREAK | |
| DDDAS/DDIP Summary | | |
| 16:40 | DDDAS Summary | Erik Blasch, AFOSR |