Poster Session 1: Data Efficient and Computationally Efficient Machine Learning

Title: Context aware zero shot recognition
PoC: Ruotian Luo

Title: Diastolic Arrays: Efficient Neural Network Inference Acceleration
PoC: Michael Mishkin and Mikko Lipasti

Title: Student Acoustically grounded word embeddings for improved acoustics-to-word speech recognition
PoC: Shane Settle

Title: Student Multi-view representation learning for sequences
PoC: Qingming Tang

Title: Memory Efficiency of Matricies
PoC: Chien-Cu Chen

Title: Deep Learning for Organometallic Compound Property Prediction
PoC: Nathaniel Krakeur

Title: Semantic query-by-example speech search using visual grounding
PoC: Herman Kamper, Aristotelis Anastassiou, Karen Livescu

Data Efficient Machine Learning Thrust

Title: Adaptive Online Learning, Monitoring, and Sampling for Big Data Streams
PoC: Xiochen Xian

Title: Learning the nearest neighbor graph with noisy distance measurements
PoC: Blake Mason

Title: Fast convergence for mini-batch stochastic gradient descent with adaptive batch sizes
PoC: Scott Sievert

Title: Verification Guided Tree Search for Deep Reinforcement Learning
PoC: Daniel Melcer

Title: Low algebraic dimension matrix completion
PoC: Greg Ongie

Title: No Clash Teaching Dimension of Smoothly Parameterized hypothesis spaces
PoC: Rahul Parhi

Title: MaxGap Bandit: Adaptive Algorithms for Approximate Ranking
PoC: Ardhendu Tripathy

Title: Sample Complexity of Species Tree Estimation From a Linear Combination of Internode Distances
Poc: Harrison Rosenberg & Sebastian Roch

Title: Classifying Satellite Light Curves
AFRL PoC: Walter Bennette
Affiliation: AFRL/RIEA

Title: Uncovering High-Confidence Mistakes for Classification Models
AFRL PoC: Walter Bennette
Affiliation: AFRL/RIEA

Title: ESCAPE Multi-Modal Data Set for ML Research
PoC: Peter Zulch
Affiliation: AFRL/RIGC

Title: Low Shot Learning at DSTL
PoC: Todd Robinson
Affiliation: DSTL

Title: Calibration Models and System Development for Compressive Sensing with Micromirror Arrays
PoC: Rebecca Profeta
Affiliation: AFRL/RYAT

Title: Characterizing Inter-Layer Functional Mappings of Deep Learning Models
PoC: Donald Waagen
Affiliation: AFRL/RWWI

Title: Comparing Classifiers that Exploit Random Subspaces
PoC: Jamie Gantert
Affiliation: AFRL/RWWI

Title: USAF Relevant Remote Sensing Data Sets with Labels
PoC: Todd V. Rovito
Affiliation: AFRL/RYAT

Computational Efficiency Thrust
Leads: Mikko Lipasti UW-Madison, Clare Thiem AFRL/RI, Dimitris Papailiopoulos UW-Madison
Title: Bitstream computing  
PoC: Kyle Daruwalla

Title: Neuromorphic Computing for Computational Efficiency  
PoC: Clare Thiem  
Affiliation: AFRL/RITB

Title: Assessing Cognitive Workload via a Passive Brain-Computer Interface with Ensemble Learning  
PoC: Justin R. Estepp  
Affiliation: AFRL/711 HPW

Title: Complete & Orthogonal Replication of Hyperdimensional Memory via Elementary Cellular Automata  
PoC: Nathan McDonald  
Affiliation: AFRL/RITB

Title: Machine Learning on a Neuromorphic Computer with TrueNorth Processors (1 of 2)  
PoC: Clare Thiem  
Affiliation: AFRL/RITB

Title: Machine Learning on a Neuromorphic Computer with TrueNorth Processors (2 of 2)  
PoC: Clare Thiem  
Affiliation: AFRL/RITB

Title: Inverse Design of All-Dielectric Metasurface Reflectors  
PoC: Meghan N. Weber  
Affiliation: AFRL/RXAP

**Poster Session 2: Operational and Adversarial Robustness**

Title: Fast Adversarial Training with Stale Perturbation Updates  
PoC: Yang Guo

Title: DIODE: A Dense Indoor and Outdoor DEpth Dataset  
PoC: Greg Shakhnarovich

Title: Processing light curve data to hopefully be able to classify satellite bus types.  
PoC: Curt Lockhart

Title: Intersection of optimization and control  
PoC: Laurent Lessard
Title: Adversarial Machine Learning  
PoC: Yingyu Liang

Title: Neumann Networks for Inverse Problems in Imaging  
PoC: Davis Gilton

Title: Estimating Network Structure from Incomplete Event Data  
PoC: Benjamin Mark

**Operational Robustness Thrust**  
Leads: Rebecca Willett UC, Ashley Prater-Bennette AFRL/RI, Karen Livescu TTIC

Title: Standardized Machine Learning Software to Enable Rapid Iteration of Materials Science Research  
PoC: Benjamin Affenbach

Title: Autonomous Swarms for Information-aware Mission Operation with Verification  
PoC: Jeffrey Hudack  
Affiliation: AFRL/RIEA

Title: Deep Learning based Super Resolution of Aerial and Satellite Imagery  
PoC: Asif Mehmood  
Affiliation: AFRL/RYAT

Title: Data-Informed Design of Algorithms with Provable Guarantees  
PoC: Zola Donovan  
Affiliation: AFRL/RISA

Title: An Approach to a Goal-Oriented Conversational Agent  
PoC: Krista Anken  
Affiliation: AFRL/RIEA

Title: Specification-Guided Tree Search for Reinforcement Learning  
PoC: Alvaro Velasquez  
Affiliation: AFRL/RISC

Title: StreamlinedML (SML)  
PoC: Amy Wong  
Affiliation: AFRL/RISC
Title: Robust Pattern-Preserving Tensor Decomposition for Spatiotemporal Data Analysis and Dimensionality Reduction  
PoC: Charlotte Ellison  
Affiliation: U.S. Army Corps of Engineers, Geospatial Research Laboratory

Title: Composite Tensors with Sparse Tucker Representations  
PoC: Ashley Prater-Bennette  
Affiliation: AFRL/RISC

Title: CNN Classifier Performance w.r.t. Image Contrast  
PoC: Christopher Menart  
Affiliation: AFRL/RYAT

Title: Image2RF: Deep Signal Strength Prediction in an Urban Environment Leveraging Visual Features  
PoC: Dylan Elliot  
Affiliation: AFRL/RISC

Title: Upstream Unsupervised Sensor Fusion Using ML  
PoC: Peter Zulch  
Affiliation: AFRL/RIGC

Title: Clustering Partial State Measurements & Space Tracking  
PoC: Christopher T. Diggans  
Affiliation: AFRL/RISC

Title: Demonstrating a Tactical Server Concept Leveraging Big Data, Deep Analytics, Machine Learning (ML), and Artificial Intelligence (AI) Algorithms  
PoC: Ying Zhao  
Affiliation: Naval Postgraduate School

Adversarial Robustness Thrust  
Leads: Jerry Zhu UW-Madison, Ryan Luley AFRL/RI, Yingyu Liang UW-Madison

Title: Does Data Augmentation Lead to Positive Margin  
PoC: Shashank Rajput

Title: Convergence and Margin of Adversarial Training on Separable Data  
PoC: Zachary Charles

Title: Adversarial images and human perception  
PoC: Liam Marshall
Title: Adversarial Learning
PoC: Jerry Zhu
Affiliation: UW-Madison

Title: Critic After Convergence
PoC: Walter Bennette
Affiliation: AFRL/RIEA

Title: Using Machine Learning for Cyber Agility and Network Intrusion Detection
PoC: Nandi O. Leslie
Affiliation: Army Research Laboratory

Title: Prototypical Networks are Robust to Adversarial Perturbations
PoC: Leslie N. Smith
Affiliation: Naval Research Laboratory