**ONR Science of Artificial Intelligence Kickoff**

February 27-28, 2019 Arlington, VA

**Location:** Hilton Arlington, 950 N. Stafford Street, Arlington, VA 22203

**Wednesday 27 February 2019**

0800 0830 Registration

0830 0850 ONR Welcome & Overview

Thomas McKenna, ONR

0850 0910 Francesco Borrelli & Benjamin Recht, UC Berkeley

**Integration of Domain Knowledge and Machine Learning in Iterative Learning for Complex Tasks**

0910 0930 Leslie Kaelbling, Tomas Lozano-Perez & Joshua Tenenbaum, MIT

**Integration of Physical Domain Knowledge and Machine Learning**

0930 0950 Anirudha Majundar, Naomi Leonard, Jordan Taylor & Thomas Griffiths, Princeton University

**Structured Deep Learning for Modeling and Controlling High-Dimensional Dynamical Systems**

0950 1015 Break

1015 1035 Lawrence Carin, Katherine Heller & Elizabeth Marsh, Duke University, Mohit Bansal, UNC

**Advancing Artificial Intelligence for the Naval Domain**

1035 1055 Maxim Likhachev & Oliver Kramer, CMU, Dieter Fox, Univ. of Washington

**A Robotics Framework for Integrating Model-based Reasoning and Experience-based Learning**

1055 1115 Pradeep Ravikumar & Ruslan Salakhutdinov, CMU

**Domain-knowledge Hybridized Statistical Machine Learning (DHSML)**

1115 1135 Pedro Domingos & Hannaneh Hajishirzi, Univ. of Washington (phone)

**Vector Space Logic: A Unified Representation for Neural and Symbolic Knowledge**

1135 1155 Brian Scassellati, Yale University

**Enabling Tool Use and Causal Reasoning Through Combined Symbolic and Statistical Machine Learning**

1155 1310 Lunch

1310 1400 Panel on Naval relevant data and challenging AI problems

1400 1420 Krishna Pattipati, David Sidoti & Kurt Rohloff, Univ. of Connecticut, Basu Roy Senjuti, NJIT

**Human-AI Symbiosis for Agile Planning**

1420 1440 Jorge Cortes & Nikolay Atanasov, UC San Diego, Luca Carlone, MIT,

Panagiotis Tsiotras, GaTech

**RAIDER: Resilient Actionable Intelligence for Distributed Environment understanding and Reasoning**

1440 1500 Qi Yu & Daniel Krutz, RIT

**A Multimodal Dynamic Bayesian Learning Framework for Complex Decision-making**

1500 1520Break

1520 1540 James Allen, Lockheed Martin, Matthias Scheutz, Tufts,

Warren Powell, Princeton

**Theory of Mind Advisor for Decision Support (ToMADS)**

1540 1600Subbarao Kambhampati, Nancy Cooke & Siddharth Srivastava, Arizona State University

**Human-Aware Planning & Decision Support for Collaborative Complex Decision-Making**

1600 1700Panel: New directions in machine learning and AI

**Thursday 28 February 2019**

0830 0850 Randall O’Reilly, Seth Herd, Thomas Hazy & Kai Krueger, eCortex, Inc.

**Capturing the Power and Pitfalls of Human Decision-Making**

0850 0910 Mac Schwagger, Stanford, Daniela Rus, MIT

**AI Nets: Predicting Actions and Inferring Intentions of Groups of Targets with a Network of Surveillance Robots**

0910 0930 Julie Adams, Oregon State, Michael Goodrich, BYU, Matthias Scheutz,Tufts Univ.

**A Formal Framework for Developing Resilient Teams of Heterogeneous Autonomous Agents**

0930 0950 Lu Feng, UVA, Zsolt Kira, Georgia Tech, Ufuk Topcu, Univ. of Texas, Pratap Tokekar, Virginia Tech

**Joint Perception and Temporal Logic Planning for Distributed Agents in Dynamic Environments**

0950 1010 Break

1010 1030 Parisa Kordjamshidi, James Allen, Choh Man Teng, Brent Venable, IHMC

**A Declarative Learning Based Programming Framework for Integration of Domain Knowledge and Statistical Learning**

1030 1050 Laura Hiatt, Greg Trafton, NRL

**Cognitive and Statistical Models**

1050 1110 Will Bridewell, NRL

**Advancing Artificial Intelligence for the Naval Domain**

1110 1130 Rahul Sarpeshkar, Dartmouth

**Quantum Sequence Recognition Via Hybrid Analog Spiking-Neuron-Like Elements**

1130 1140 Sentis, U Texas - Austin, Matthias Scheutz, Tufts

**Out in the Open: Intelligent Robots that Learn from Instructions and Demonstrations**

1140 1200 Amit Roy-Chowdhury, Muhammad Asif, Konstantinos Karydis,

Fabio Pasqualetti, UC Riverside

**Integrated Perception and Planning in Mobile Vision Networks**

1200 1300 Lunch

1300 1320 John Leonard & Jonathon How, MIT

**Task-Aware Non-Gaussian Perception and Planning for Distributed Marine Autonomy**

1320 1340 Zhang, Georgia Tech, Silvia Ferrari, Cornell, Sebastian Scherer, CMU

**Stochastic Distributed Optimal Dual Control: A Unified Framework for Decentralized Multi-agent Perception and Planning (SDODC)**

1340 1410Invited speaker: John Leonard, MIT

**Safe AI**

1410 1430 Rajan Bhattacharyya, Aruna Jammalamadaka, HRL Laboratories

**Causal Adaptive Decision Aid (CADA)**

1430 1450 Break

**BRC on Decentralized Perception**

1450 1510Kostas Daniilidis, George Pappas, UPENN

**Active Semantic Distributed Perception**

1510 1530Silvia Ferrari, Mark Campbell, Kilian Weinberger. Cornell

**Convolutional-feature Analysis and Control for Mobile Visual Scene**

**Perception**

1550 1610Jon How, Tamara Broderick, John Fisher, MIT, Stefano Soatto, UCLA,

Chris Amato, Northeastern

**Context and Task-aware Active Perception for Multiagent Systems**

1610 1630 Vahid Tarokh, Duke

**Decentralized Perception from Online Learning and**

**Semantic Understanding**

1630 Adjourn

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