



AGENDA

Monday, 13 November 2023 (Afternoon)

1200 Check-In/To-Go Lunch

1300–1700	In-Person Courses and Tours	
Track A: Courses (Unclassified In-Person Only)		Track B: Tours (Unclassified In-Person Only)
Test and Evaluation of AI Systems <i>Michael Yee, Lei Hamilton</i>		AI-Enabled Ultrasound for Field-Forward Medicine
A Practical Guide to Applied Generative AI <i>Pooya Khorrami, Evan Young, Swaroop Vattam, Olga Simek, Miriam Cha, Keegan Quigley, Trang Nguyen</i>		Autonomous Systems Development Facility (ASDF)
Early Critical Considerations of Ethical AI Systems <i>Ngaire Underhill, Isabelle Hurley</i>		Human-AI Performance Incubator (HAPI) Laboratory
Human-Machine Teaming for Systems Engineering <i>Kimberlee Chang, Vince Mancuso, Sarah McGuire</i>		STRIVE Center
Artificial Intelligence for Cyber <i>Jensen Dempsey, Timothy Reid, William Stephenson, Ashley Suh</i>		
Counter Influence Operations Using AI and Causal Inference, with Ethical Considerations <i>Ed Kao, Erika Mackin, Amna Greaves</i>		

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AGENDA

Tuesday, 14 November 2023

AI Perspectives (Unclassified | Auditorium | Hybrid)

0800 Check-In/Continental Breakfast

0900 Workshop Overview

Chelsea Curran, Associate Technology Officer, MIT LL

0915 Welcome and Opening Remarks

Dr. Eric Evans, Director, MIT LL

0930 Keynote: Accelerating AI for the Department of the Air Force: Partnerships and Transition Paths

Col. Garry "Pink" Floyd, Department of the Air Force Director, DAF-MIT AI Accelerator

1015 Networking Break

Session 1: AI Technology Transitions (Unclassified)

1030 Session Introduction

Lori Layne, Rob Morrison, MIT LL

1035 Towards Accelerated Biomedical AI Technology Transition

Laura Brattain, MIT LL

1100 Neural Network Algorithms for Operational NASA Earth Science Products

Adam Milstein, MIT LL

1125 Training Deep Learning Spacecraft Component Detection Algorithms Using Synthetic Image Data

Herbert Viggh, MIT LL

1150 Space AI Launchpad: Adaptive AI for Real-World Environments

Brian Knoth, MIT LL

1215 Lunch

Session 2: Government Perspectives on AI and Autonomy (Unclassified)

1315 Panel Discussion

Panelists: Col. Garry "Pink" Floyd, DAF-MIT AI Accelerator; David Jin, CDAO Assess and Assure Division; Dr. Tim McKinnon, IARPA; Dr. Joseph Olive, DARPA SETA

Moderator: Heidi Perry, Chief Technology Officer, MIT LL

1415 Networking Break

Session 3: Autonomy in Action (Unclassified)

1430 Session Introduction

Bryan Reid, Yakov Salzberg, MIT LL

1435 A Glimpse into the Future of National Security with Autonomous Vehicles: The Fast and Agile, The Miniature, and the Swarming Autonomy

Prof. Sertac Karaman, MIT

1500 Leveraging Scene Graphs for Real Time Outdoor Autonomy

Eric Cristofalo, MIT LL

1525 Scalable Heterogeneous Autonomy for Resilient Coordination

Zachary Serlin, MIT LL

1550 USAF Flight Test and Evaluation of AI and Autonomous Systems

Maj. Ross "WEZ" Elder, 40th Flight Test Squadron, Advanced Capabilities Division

1615 AI Perspectives Day Wrap-Up

Chelsea Curran, Associate Technology Officer, MIT LL

1630 Poster Session and Networking Reception (Unclassified | Cafeteria)



AGENDA

Wednesday, 15 November 2023

AI Technologies (Unclassified | Auditorium | Hybrid)

0800 Check-In/Continental Breakfast

0900 Workshop Remarks *Heidi Perry, Chief Technology Officer, MIT LL*

0915 Keynote: Advances in Artificial Intelligence: Reflections and Futures *Robert Bond, Former Chief Technology Officer, MIT LL*

1000 Networking Break

Session 1: Generative AI and Beyond (Unclassified)

1015 Session Introduction *Charlie Dagli, Michael Chan, MIT LL*

1020 Learning Speech Audio Representations with Multimodal Self-Supervision *Prof. David Harwath, The University of Texas at Austin*

1045 Generative AI for 3D Airborne Radar Imaging *Michael Newey, MIT LL*

1110 Semantic Forensics *Dr. Wil Corvey, DARPA Information Innovation Office*

1135 Task Force Lima *LtCol Jeff Wong, CDAO Algorithmic Warfare Directorate*

1200 Lunch

Session 2: Computing Foundations (Unclassified)

1300 Session Introduction *Vijay Gadepally, Paul Monticciolo, MIT LL*

1305 Latest Developments in Neuromorphic Computing at AFRL *Dr. Qing Wu, AFRL-Rome*

1325 AI for Critical Systems – Looking Ahead *Prof. William Scherlis, Carnegie Mellon University*

1345 IBM NorthPole Neural Inference Machine *Dr. Jennifer Klamo, IBM Research*

1405 High-Performance Space Computing Using the Qualcomm Snapdragon Processor *Dr. Douglas Sheldon, NASA JPL*

1425 Panel Discussion: AI/ML Processing Challenges
*Moderator: Vijay Gadepally
Panelists: Karen Gettings, Helen Kim, Allan Wollaber*

1440 Lincoln Laboratory Supercomputing Center Virtual Tour *Jeremy Kepner, MIT LL*

1445 Networking Break

Session 3: Human-Machine Teaming (Unclassified)

1500 Session Introduction *Vincent Mancuso, Kimberlee Chang, MIT LL*

1505 Unsupervised Network-Based Behavior Inference from Action Sequences *Sam Polk, MIT LL*

1530 Tactical Edge Reprogramming for Rapid Autonomy Adaptation *Hosea Siu, MIT LL*

1555 An Extensible Software Framework for Human-Machine Teaming in Warfighter Applications *Ronald Ankner, MIT LL*

1620 Necessary and Sufficient Conditions for Human-Machine Teaming and Research *Prof. Matthew Gombolay, Georgia Institute of Technology*

1645 AI Technologies Day Wrap-Up *Heidi Perry, Chief Technology Officer, MIT LL*



AGENDA

Thursday, 16 November 2023

Track A: AI Applications (Restricted Access Auditorium In-Person only)		Track B: Vanguard AI (Unclassified S2-180 Hybrid)	
0800	Check-In/Continental Breakfast	Check-In/Continental Breakfast	
0900	Workshop Remarks <i>Joseph Campbell, Laboratory Fellow, MIT LL</i>	Workshop Remarks <i>Anu Myne, Assistant Group Leader, MIT LL</i>	
0915	Keynote: Artificial Intelligence at NSA: A Mission Driven Journey <i>Stuart Harshbarger, Assoc. Technical Director, NSA Research</i>	Keynote: Designing a New Generation of AI with Neuromorphic Computing <i>Prof. Cory Merkel, Rochester Institute of Technology</i>	
1000	Networking Break		
Session A1: Trustworthy AI (Restricted Access)		Session B1: Advancing the AI Frontier (Unclassified)	
1015	Session Introduction <i>Michael Yee, Raul Harnasch, MIT LL</i>	Session Introduction <i>Anu Myne, Alex Vasile, MIT LL</i>	
1020	Understanding Foreign Artificial Intelligence Capabilities <i>Dr. Joshua Lee, DoD</i>	AI-Directed Experiment Design for Scientific Discovery <i>Lin Li, MIT LL</i>	
1045	Artificial Intelligence: Classification Quick Reference Guide <i>Dr. Isabel Averill, USG</i>	Physics-informed AI for Sensor Signal Processing <i>Allan Wollaber, MIT LL</i>	
1110	Subspace Alignment-Based Generalization Assessment <i>Benjamin Miller, MIT LL</i>	Characterizing Novel Proteins using AI <i>Phillip Tomczsko, MIT LL</i>	
1135	The Very Latest on IARPA’s Efforts in Human Language Technology <i>Dr. Tim McKinnon, IARPA</i>	Toward an AI Engine for News Event Analysis and Forecasting <i>Dr. Otkie Hassanzadeh, IBM Research</i>	
1200	Lunch		
Session A2: Mission Applications (Restricted Access)		Session B2: Breaking Barriers (Unclassified)	
1300	Session Introduction <i>Pedro Torres-Carrasquillo, Nicolas Malyska, MIT LL</i>	Session Introduction <i>Anu Myne, Mordechai Rothschild, MIT LL</i>	
1305	Rapid Prototyping of Artificial Intelligence on X-62 for DARPA ACE <i>Maj. Joshua “Voodoo” Rountree, DAF-MIT AI Accelerator</i>	Digital Twins of the Earth – Opportunities and Challenges <i>Thomas Huang, NASA JPL</i>	
1330	Video Processing Deployment <i>Douglas Sturim, Kevin Brady, MIT LL</i>	Quantum Computing Circuits for Applications in Science and AI <i>Kevin Obenland, MIT LL</i>	
1355	Beyond Keywords: Enabling Semantic Search for Analysts <i>Dr. Douglas Reynolds, USG</i>	Generative AI and Research Integrity <i>Heather Sardis, MIT</i>	
1420	Select AI Applications at the Strategic Capabilities Office <i>Stephen Winchell, SCO</i>	AI for Humanity <i>Prof. Carla Gomes, Cornell; Dr. Doug Riecken, AFRL/AFOSR</i>	
1445	Networking Break (Note: Session B2 Networking Break starts 1455)		
Session 3: Community Call to Action (Merged Tracks, Unclassified Auditorium Hybrid)			
1515	Panel Discussion <i>Panelists: Dr. Evana Gizzi, NASA Goddard Space Flight Center; Stuart Harshbarger, NSA Research; Dr. Jaret Riddick, Georgetown University CSET; Dr. Kimberly Sablon, USD(R&E); Ted Tanner, BigBear.ai</i>		<i>Moderator: Heidi Perry, Chief Technology Officer, MIT LL</i>
1615	Conference Wrap-Up		<i>Heidi Perry, Chief Technology Officer, MIT LL</i>