



PROGRAM MANAGER(S): Dr. Howard Shrobe & Dr. Alvaro Velasquez (I2O)

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| DATE: Thursday, August 24, 2023 | TIME: 8:30am-11:30am |
| ROOM NAME: 502 Cowlitz – 5 th Floor | |

DESCRIPTION

Neuro-symbolic computation is the synthesis of the two major traditions in AI: Traditional Symbolic (logic, probability and model-based reasoning) and Neural-net (statistical, data driven). Each of these traditions have been shown to be capable of satisfying significant DoD needs ranging from logistic planning and scheduling to target recognition, and each can be computationally demanding. This workshop will explore novel circuitry and adaptive architectures that can support high performance, integrated neural-symbolic computation at the edge.

AGENDA

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| 8:30am-8:45am | Welcome & Introduction Dr. Howard Shrobe and Dr. Alvaro Velasquez / Program Managers / DARPA |
| 8:45m-9:05am | Hyperdimensional Computing Dr. Mohsen Imani / Assistant Professor / University of California: Irvine |
| 9:05am-9:25am | In-memory Neuromorphic Computing Dr. Isidoros Doxas / Principal Scientist / Northrop Grumman |
| 9:25am-9:45am | Neuro-Symbolic Hardware-Software Co-Design Dr. Atlas Wang / Assistant Professor / University of Texas at Austin |
| Morning Break: 9:45am-10:15am | |
| 10:15am-10:35am | Neuro-Symbolic Hardware-Software Co-Design Dr. Hai Li / Professor / Duke University |
| 10:35am-10:55am | Probabilistic Programming Hardware Dr. Vikash Mansingha / Principal Research Scientist / MIT |
| 10:55am-11:30am | Panel Discussion DARPA, UC Irvine, Northrop Grumman, UT Austin, Duke University, & MIT |
| Workshop Concludes at 11:30am | |