Data Science Seminar Series

Towards building new AI using Neuromorphic Computing Systems

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Deep learning models define the landscape of AI today and have resulted in a great deal of success in enabling new capabilities in intelligent data processing that have made a big impact on society. Intel is actively involved in developing hardware products to support these models. However, these models are still limited in many ways and there is a need to drive research in new directions to further enhance their capabilities. One such path is to explore principles of how the brain computes and use that to develop novel neuromorphic algorithms and systems that may help to achieve these new capabilities. In this talk, I will provide a historical overview of the AI landscape and highlight some of the challenges facing the field. I will then provide an overview of neuromorphic computing at Intel as an alternate option and highlight examples where this form of computing excels relative to AI models of today.

Narayan Srinivasa is an expert in machine learning and neuromorphic computing and its applications to solve real world problems. He Is currently with Intel Labs as Director of Machine Intelligence Research Programs and a Senior Principal Engineer. Until recently, he was the CTO of Eta Compute, developing energy efficient AI applications for edge devices. Prior to Eta Compute, Dr. Srinivasa was at Intel Labs as Chief scientist and was the chief architect for the 14 nm Loihi neuromorphic chip with on-chip learning. Before Intel, he was a Principal Scientist and Director for the Center for Neural and Emergent Systems at HRL and served in various capacities including the principal investigator for DARPA programs SyNAPSE, Physical Intelligence, UPSIDE. He was the Principal Investigator on several programs within HRL on topics ranging from sensing and robotics, adaptive control, autonomous vehicles and biologically inspired systems for both Boeing and General Motors. Dr. Srinivasa has 79 issued patents and published over 94 articles in peer-reviewed journals and conferences. Reports about his work have appeared in The Economist, MIT Technology Review, Wired Magazine, IEEE Spectrum and Forbes among others. Dr. Srinivasa has a Ph. D. from the University of Florida and was a Beckman Post-Doctoral Fellow at the University of Illinois at Urbana-Champaign.