Enabling Next Generation Machine Learning: Computation in an Uncertain and Changing World
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In the future, machine learning systems will need to evolve to understand and interpret uncertainty in their decision making algorithms. In order to do this, we need to harness the stochastic nature of emerging materials in order to model that uncertainty. This means moving away from the idea that uncertainty can be used to save power and more to the idea that we need to accurately understand and model that uncertainty in order to make better decisions. This shift will enable us to build machines which can adapt and act in an uncertain world. Spintronic devices and other next generation technologies which are stochastic in nature will be key in this future. We need to embrace the stochastic nature of these technologies and understand that non-deterministic systems are the future.

BIO: Mr. Trung Tran joined DARPA as a program manager in the Microsystems Technology Office in October 2015. Tran earned a BSEE from the US Air Force Academy and an MBA from Wharton- UPENN. While in the Air Force, he was stationed at Fort Meade and Hanscom AFB working under AIA. He developed cryptographic chips and command and control networks which focused on reducing time between sensor and shooter. He received 4 medals for his work in these areas. He has spent the last 15 years in Silicon Valley developing products which range from 100G Top of the Rack Switches, 1U Server Blades, and semiconductors including FPGAs, Memory, PHYs, and Framers. He is a former Vice Chairman of the JEDEC Board of Directors where he worked on the development of DDR3 and FBDIMM specifications. His interest included machine learning, data analytics, and non-conventional computer architecture.