

**CRUNCH Seminars at Brown, Division of Applied Mathematics**

**Friday - September 29, 2023**

**Leveraging Temporal Dynamics in Training Spiking Neural Networks**

**Jason Eshraghian, University of California, Santa Cruz**

**The brain is the perfect place to look for inspiration to develop more efficient neural networks. One of the main differences with modern deep learning is that the brain encodes and processes information as temporal spikes rather than continuous, high-precision activations. This presentation will dive into the intersection between neuroscience, deep learning, and hardware acceleration. We will explore how learning rules in neuroscience intersect with the learning rules in deep learning, and how the Python package Eshraghian developed - snnTorch - spans across these layers of abstraction to drive forward the next generation of deep learning algorithms.**