

Name: Shih-Chii Liu

Affiliation: Institute of Neuroinformatics, University of Zurich and ETH Zurich

Title: TinyML Audio Algorithms

Abstract: Development of audio TinyML algorithms and their implementation onto embedded hardware have enabled pre-ASIC study of the power-latency tradeoff of deep network architectures and feature representations. This talk presents algorithmic studies of TinyML deep networks on audio tasks including keyword spotting and speaker verification. We will compare the use of input features generated from the asynchronous events of a spiking audio sensor and input features generated from sampled audio. We will compare the throughput and energy efficiency of the FPGA implementations of recurrent neural network architectures used for different TinyML audio tasks. We will also discuss the system cost projection of implementing these networks onto an ASIC recurrent network accelerator.