

—— Spiking neural networks for real-time inference tasks

09:00-17:00, January 25 @ 5BC

Overview

Morning

- Introduction (You Are Here)
- Vision processing with spiking CNNs

Afternoon

- Audio processing with recurrent SNNs
- ECG processing with recurrent SNNs

Overview — Morning

- 9am: Introduction (You Are Here) (15 mins)
- Introduction to SNNs (30 mins)
- Demo: visual inference with a spiking CNN (15 mins)
- --- Coffee break (15 mins) ---
- Accessing google colab
- Tutorial: Building an event-based visual classifier
- ---12:00–13:30 Lunch ---

Overview — Afternoon

- 13:30: Introduction to reservoir computing with SNNs (30 mins)
- Demo: Spoken wake-phrase recognizer (15 mins)
- Setting up for tutorial (10 mins)
- --- Coffee break (15 mins) ---
- Tutorial: Building a voice recognition application
- Demo: ECG processing with spiking NN hardware (30 mins)
- Wrap-up (15 mins)

Workshop introduction

- Who we are
- Goals of workshop
 - Understand the difference between ANNs and SNNs
 - Get an overview of how SNNs can be used for several signal processing tasks
 - Learn how to build and train a few SNNs
 - Appreciate the benefits of using SNNs for low-power inference
- Who you are

Getting started

- Google CoLab
 - <https://colab.research.google.com/>
- File | Open notebook...
 - GitHub
 - Search: “ai-cortex”
 - Repository: “snn-workshop-amld-2020”
 - “1_IntroToSNNs.ipynb”