

# Event-Based Computing Using Neuromorphic Cameras and Application to Neuro-Imaging

## Participating faculty:

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## Proposal

Neuromorphic cameras or event-driven cameras (also known as the silicon retina) generate output in the form of asynchronous events corresponding to illumination changes at every pixel. These cameras have several advantages over conventional frame-based cameras: a high dynamic range, low-latency, sparse measurements, low data rates, high temporal resolution, etc. The objective of this research is to deploy neuromorphic cameras for high-resolution neuro-imaging.

Over the course of the PhD, the student would get trained in various aspects related to Image Processing, Machine Learning/Deep Learning, Computational Neuroscience, Neuromorphic Computing, etc.

## Pre-requisites

The ideal candidate should have a background in Digital Signal Processing, Linear Algebra and be proficient in programming (Matlab/Python).