

Project Title	Spike-based Visual Processing
Project Leader	Garrick Orchard
<p>Abstract</p> <p>This project is intended to serve as an introduction to spike-based visual processing for the participants. Participants will be able to record their own data using neuromorphic cameras and will learn how to do some basic visual filtering/processing using spiking neural networks.</p> <p>Advanced students who have previous experience with neuromorphic cameras can tackle motion and recognition tasks using ELM methods supplied by Profs Basu and Tapson.</p>	

Attendee Information

Project Leader Information			
Name	Garrick Orchard		
Title	Neuromorphic Vision Processing	Nationality	South African
Institute	SINAPSE, NUS	Email	garrickorchard@nus.edu.sg

Project Title	Structure and Function of the Mammalian Brainstem
Project Leader	Hari Subramanian
<p>Abstract</p> <p>This project is intended to serve as an introduction to the organization, structure and function of the brainstem which controls and regulates body homeostasis. Concepts such as sensory processing, motor control and sensory motor integration would be examined from the anatomy, physiology and pharmacology approaches. Further, the sessions would investigate neural engineering & prosthetic principles applicable to neuromodulation of brainstem circuits for autonomic control during health and disease.</p> <p>Hands on projects for the students would comprise of assessment of neural principles that govern brain function and short essays.</p> <p>If LabTutor is made available, then specific exercises will be designed for students on measurement and evaluation of physiological data, analysis and report.</p>	
<p>Remarks</p> <p>I believe that a good 4-day course on brain structure and function would be valuable for engineering students in understanding concepts of neural engineering applicable to brain function. This will further inspire design and development of neuromodulation prosthesis than can be applied in various disease settings.</p>	

Attendee Information

Project Leader Information			
Name	Hari Subramanian		
Title	Structure and Function of the Mammalian Brainstem	Nationality	Australia
Institute	The University of Queensland	Email	h.subramanian@uq.edu.au

Project Title	3D Tracker
Project Leader	Ching-Hua Cheng & Tang-Chieh Liu
<p>Abstract</p> <p>This project uses an Arduino platform and 3 sheets of aluminum foil to track the position of an object, such as your hand, in a region surrounded by the aluminum plates. With touching the aluminum plates, the resulted capacitances between the aluminum plates and the object can help us to locate the position of the object in the space. By calculating the obtained capacitances, the position of the object are requested to be derived on any computer. The ways of displaying the information or other possible applications in biological or medical engineering are open to the participants.</p>	

Project Leader Information			
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Name	Chin-Hua Cheng		
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Project Staff Information			
<i>(Please expand the form in case more members are attending)</i>			
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BioPro 2015

Asia-Pacific Summer School on Bio-inspired Systems and Prosthetic Devices

Call for Hands-on Project

Project Information

Project Title	Neuropixscope: Toward a compact measurement solution for neuromorphic systems.
Project Leader	Tao Lee
Abstract Neuroscience is plagued by the precision of measuring neuron activities, which hampers not only the advance of the fundamental science, but also the engineering of neuromorphic systems. In this talk, we will present, for the first time, to the Asia-Pacific audience, the IMEC's solution to this problem: Neuropixscope, a scientific instrument designed to provide powerful but compact measurement solution for the neuroscience community.	
Apparatus Oscilloscope, power supply, workbench	
Laptop, Neuropixscope	
Requisite from the host None	
Remarks & Other Requirements None	

Attendee Information

Project Leader Information			
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