

ENB Elite Master Program Neuroengineering (MSNE) Invited Presentation

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What is Neuromorphic Event-based Computer Vision? Sensors, Theory and Applications.

Abstract: In this presentation, I will introduce neuromorphic, event-based approaches for image sensing and processing. State-of-the-art image sensors suffer from severe limitations imposed by their very principle of operation. These sensors acquire the visual information as a series of “snapshots” recorded at discrete point in time, hence time-quantized at a predetermined frame rate, resulting in limited temporal resolution, low dynamic range and a high degree of redundancy in the acquired data. Nature suggests a different approach: Biological vision systems are driven and controlled by events happening within the scene in view, and not – like conventional image sensors – by artificially created timing and control signals that have no relation to the source of the visual information (full abstract online: <http://go.tum.de/173780>)



Biography: Ryad B. Benosman is a full Professor at both the University of Pittsburgh Medical Center, Carnegie Mellon University and Sorbonne Universit s where he does research at the intersection of robotics, computer vision and neuroscience. Specifically, he investigates the use of standard and neuromorphic cameras to enable autonomous, agile robotics, brain-machine interfaces focusing on retina prosthetics, optogenetics stimulation and recently visual cortex stimulation.

Ryad did his PhD in robotics and computer vision at University of Pierre and Marie Curie after studying pure and applied mathematics. He is a pioneer and a leading researcher in the field of event based neuromorphic computer vision. His lab developed the ATIS neuromorphic camera. He has authored more than 200 papers, 60 of which are considered to provide the foundations of neuromorphic computer vision. He also founded several companies such as Prophesse (formerly Chronocam) the leading company in event-based vision, Pixium Vision (retina prosthetics), Chronolife (eHealth) and more recently Brainiac (neural processor computer).

The Talk is hosted by Prof. Dr. Gordon Cheng (Chair of Cognitive Systems)

Monday, November 12 2018, 5:00 p.m.

Theresienstr. 90, 80333 Munich, room N1135

All talks in the MSNE Invited Speaker Series are open to students, staff, and members of the public. Attendance is free.

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