GCOE CEDI
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Global COE program "Electronic Devices Innovation"
Global Seminar

Dynamic Silicon Retina for Digital Vision

Sponsored by Osaka University global COE program "Electronic Devices Innovation" (CEDI)

10 March, 2008, 14:40 – 16:10

Room E6-112, Division of Electric, Electronic and Information Engineering,

Graduate School of Engineering, Osaka University, Suita, Osaka, Japan

Speaker

Tobi Delbruck

Group leader at the Institute of Neuuroinformatics(INI),

ETH Zurich and the University of Zurich, Switzerland

Abstract

Conventional cameras see the world as a series of static pictures, making it expensive and awkward to do dynamic vision.

This talk will review the history of silicon retinas but will mostly describe a recent breakthrough in building a high-performance frame-free dynamic vision sensor whose pixels push out spike "address-events" at the moments that they see motion. The talk will include a live demonstration and will show how the pixel achieves high bandwidth and good decision matching despite poor transistor matching. Next, the talk will describe how this sensor leads naturally to fast event-driven procedural algorithms for extracting low-level features (e.g. orientation, motion) and high-level object tracking, opening a new frame-free approach for machine vision.

http://siliconretina.ini.uzh.ch

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