IEEE CIS Summer School On Neuromorphic and Cyborg Intelligent Systems

2015/8/18

http://www.cs.zju.edu.cn/~gpan/necis2015/index.html

Introduction

As research continues, the line between humans and machines begins to blur. On the one hand, biological beings and machines are becoming closely-coupled with help of brain-machine interfaces (BMIs). Therefore, cyborg intelligence, which aims to tightly integrate artificial intelligence with biological intelligence, is emerging. Cyborg refers to a symbiotic bio-machine system, consisting of both organic and computing components. On the other hand, neuromorphic systems further envisions the closely-coupled connection of the organic and computing components and machines. Neuromorphic systems use digital, analog, and mixed-mode digital/analog circuits and software systems to mimic models of biological neural systems (such as perception, motor control, and multisensory integration). The fine-grained electric mimicry of the nervous system makes the machine side closer to the biological side.

The main goal of this summer school is to provide a comprehensive review of current trends of research in the field of neuromorphic systems and cyborg intelligence. The participants are expected to acquire knowledge of various learning framework and computational models for neuromorphic systems and cyborg intelligence and be able to promote research activities in this area.

Invited Speakers

Prof. Tomoki Fukai

Lab for Neural Circuit Theory, RIKEN Brain Science Institute

Talk Title: Fat tail dynamics in the brain

Part -1 : network dynamics

Part -2 : synaptic plasticity

Prof. Nikola Kasabov

Director Knowledge Engineeing and Discovery Research Institute, Auckland University of Technology

Talk Title: To be determined

Prof. Luping Shi

Center for Brain-Inspired Computing Research (CBICR), Tsinghua University, China

Talk Title: Development of a Brain Inspired Computing System

Prof. Jörg Conradt

Center of Competence on NeuroEngineering, Department of Electric and Computer Engineering, Technische Universität München

Talk Title: Neuromorphic Vision Sensors and Event-based Information Processing for Robotics

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Dr. Huajin Tang

Institute for Infocomm Research, A*STAR, Singapore

College of Computer Science, Sichuan University, Chengdu, China

Talk Title: Learning in Neuromorphic Systems and Cognitive Robots

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Prof. Yiran Chen

Electrical and Computer Engineering, University of Pittsburgh

Talk Title: Brain-Inspired Computing: The Extraordinary Voyages in Known and Unknown Worlds

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Dr. Travis DeWolf

Systems Design Engineering, University of Waterloo

Talk Title: Neural modeling using the NEF and Nengo

Cristian Axenie

Research assistant in the Neuroscientific System Theory Group at the Technische Universität München

Talk Title: Neuromorphic Vision Sensors and Event-based Information Processing for Robotics

Tentative Schedule

Location

Meeting room 211, Shaw Science Hall, Yuquan Campus, Zhejiang University

Organizers

Program Co-chairs:

Gang Pan

Department of Computer Science, Zhejiang University, Hangzhou, China

E-mail: gpan@zju.edu.cn

Zonghua Gu

Department of Computer Science, Zhejiang University, Hangzhou, China

E-mail: zonghua@gmail.com

Yueming Wang

Qiushi Academy for Adavanced Studies, Zhejiang University, Hangzhou, China

E-mail: ymingwang@zju.edu.cn

Advisory Committee:

Zhaohui Wu

Department of Computer Science, Zhejiang University, Hangzhou, China

Kay Chen Tan

Dept. of Electrical and Computer Engineering, National University of Singapore

Huajin Tang

Institute for Infocomm Research, A*STAR, Singapore

College of Computer Science, Sichuan University, Chengdu, China

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