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News

Symposium on Grand Challenges in Neural Technology (SGCNT), December 4-5, 2013, Singapore

SGCNT-2013 » Program

Program

Symposium on Grand Challenges in Neural Technology 2013

PDF version of the program can be downloaded here:

Program

December 4, Wednesday

08:15 – 08:30 Welcome Remarks
    Nitish Thakor (SINAPSE and Johns Hopkins University) 🇸🇬 🇺🇸
    Bruce Wheeler (IEEE EMBS and University of Florida) 🇺🇸

08:30 – 10:00 Session 1: Peripheral Nerve Interfaces
    Silvestro Micera (Ecole Polytechnique Fédérale de Lausanne) 🇨🇭
    The quest for a bionic hand: recent achievements and future perspectives
    Thomas Stieglitz (IMTEK, University of Freiburg and CorTec) 🇩🇪
    Stability and Selectivity of PNS implants
    John Tsang (Institute for Microelectronics, A*STAR) 🇸🇬
    Flexible Neural Interface for the Peripheral nervous system

10:00 – 10:45 Group Photo and Coffee break

10:45 – 11:45 Session 2: Central Nervous System Interfaces
    Jit Muthuswamy (Arizona State University) 🇺🇸
    Microscale robots for stable neural interfaces
    David Holder (University College London) 🇬🇧
    Imaging of fast neural activity during evoked responses or seizures in rat cerebral cortex using Electrical Impedance Tomography

11:45 – 13:00 Lunch

13:00 – 14:00 Session 3: Circuits for Neural Interfaces
    Zhi Yang (National University of Singapore) 🇸🇬
    On-chip neural signal processing
    Yong-Ping Xu (National University of Singapore) 🇸🇬
    Peripheral Nerve Repair – A Bionic Approach
    Je Minkyu (Institute for Microelectronics, A*STAR) 🇸🇬
    Neural Recording Front-End with Analog Buffer, Digital Delay, and Spike Detection
    Shih-Cheng Yen (National University of Singapore) 🇸🇬
    Peripheral Nerve Prostheses in the Non-Human Primate

14:00 – 15:15 Session 4: Retinal Implants
    Nigel Lovell (University of New South Wales) 🇦🇺
    Challenges in Improving the Performance of a Retinal Prosthesis: Neural Interfacing and Current Steering
    Jun Ohta (Nara Institute of Science and Technology) 🇯🇵
    Challenges for high performance stimulation in a retinal prosthesis
    Jong-Mo Seo (Seoul National University) 🇰🇷
    Challenges for Improving the Safety of a Retinal Implant

15:15 – 15:35 Coffee break

15:35 – 16:30 Session 5: Neuromodulation Devices
    Herming Chiueh (National Chiao Tung University) 🇹🇼
    Closed-loop epileptic seizure detection in rats
    Luming Li (Tsinghua University) 🇨🇳
    Rechargeable DBS: from prototype to clinical use

16:30 – 18:00 Session 6: Panel on Translation and Commercialization
    Florian Solzbacher (University of Utah and Blackrock) 🇺🇸
    Building the R&D teams for commercialization of neural interfaces
    Thomas Stieglitz (IMTEK, University of Freiburg and CorTec) 🇩🇪
    From prototypes to approved devices: challenges to setup a production
    Gerald Loeb (University of Southern California) 🇺🇸
    Regulation and Reimbursement Challenges for Novel Class III Devices

18:00 – 19:00 Tour of the SINAPSE Institute and Poster Presentations

19:00 Social program

Bus from CeLS to the *Gardens by the Bay* , where you can watch a breathtaking illumination show OCBC Garden Rhapsody and buy your own dinner at the Majestic Bay or Satay by the Bay restaurants; for return trip use nearby MRT stations: Bayfront (CC Line) and Marina Bay (NS Line).

December 5, Thursday

09:00 – 10:00 Session 7: Neuromorphic Engineering

Arindam Basu (Nanyang Technological University) 🇸🇬

Neuromorphic Circuits for Scalable Neuroprosthetics

Shoushun Chen (Nanyang Technological University) 🇸🇬

Temporal Feature Extraction in Spike-based Image Processing

10:00 – 10:30 Coffee break

10:30 – 12:00 Session 7: Neuromorphic Engineering (continued)

Christoph Posch (Pierre-and-Marie-Curie University) 🇫🇷

Neuromorphic vision – sensing and encoding for temporal resolution, dynamic range and power efficiency

Ryad Benosman (Pierre-and-Marie-Curie University) 🇫🇷

Bio-Inspired Event-based Computation

Jack Gallant (University of California, Berkeley) 🇺🇸

A Reverse-Engineering Approach for Understanding Computation in the Human Brain

12:00 – 13:00 Lunch

13:00 – 14:30 Session 8: EEG-Based Brain-Machine Interfaces

Cuntai Guan (A*STAR) 🇸🇬

Brain-Computer Interfaces for Medical Applications

José del R. Millán (Ecole Polytechnique Fédérale de Lausanne) 🇨🇭

Translating Brain-Machine Interfaces to End-Users: Lessons and Challenges

Anastasios Bezerianos (SINAPSE and University of Patras) 🇸🇬🇬🇷

Investigation of brain function through connectivity mapping: A tool towards next generation Brain Computer Interface

14:30 – 15:00 Coffee break

15:00 – 16:00 Session 9: Short Presentations

Ivan Minev (Ecole Polytechnique Fédérale de Lausanne) 🇨🇭

Stimulation of the spinal cord using mechanically soft materials

Justin Dauwels (Nanyang Technological University) 🇸🇬

Theoretical framework for controlling absence seizures

Ignacio Delgado-Martínez (SINAPSE, National University of Singapore) 🇸🇬

Decoding of motor information in non-human primates using a chronic implantable system

16:00 – 16:30 Free time

16:30 Social program

Bus from LT22 Carpark to *Clarke Quay* , where you can take a 30-minute walk to the the *Chijmes Center* (via the City Hall) and buy your own dinner at the Chijmes restaurants; for return trip use nearby MRT stations: Bras Basah (CC Line) and City Hall (NS/EW Lines).