Signal Processing in the Context of Neurotechnologies (SPCN) 2020-Taiwan Program – in Taiwan Time Zone

9/21/2020 – Tutorials Chair: Dr. N. Chu

13:00 – 13:30 Introduction

13:30 – 14:30 ADNI Tutorial - Part I

- Dr. Helen Gre-Amlak, T-Mobile & UMKC

14:30 – 14:45 Break

14:45 – 15:45 ADNI - Part II

15:45 – 16:00 Break

16:00 – 17:00 CNN Tutorial – Part I

- Mark Nguyen, UMKC

17:00 – 17:15 Break

17:15 – 18:15 CNN - Part II

18:15 – 18:30 Closing

18:30 Reception

9/22/2020 – BDBC Chair: Dean Kuo-Chin Fan, College of Electrical Engineering & Computer Science, NCU

13:00 – 13:30 Introduction

13:30 – 14:30 Keynote – Dr. N. Chu

14:30 – 15:00 Break

15:00 – 16:30 Team Presentations

- Team Deep Learning Rules
- Team Vellore
- Team MINE-Professor Brain

16:30 – 17:00 Break

17:00 – 18:00 Keynote – Prof. J. Lo

18:00 – 18:30 Closing Remarks

9/23/2020 – SPCN – Opening, Chair: N. Chu

13:00 – 13:30 Opening Introduction

13:30 – 14:30 Keynote– Prof. Yuri Shelepin

14:30 – 15:30 Keynote – Prof. 羅孟宗, M. Lo

15:30 – 16:00 Break

17:00 – 18:30 Session I – *CNN Applied to Brain* Images

Session I Chair: Prof. Jinchang Ren

1. Pavlov Institute - Katerina Malahova
2. UMKC – Mark Nguyen, et al.
3. Pavlov Institute - O.V. Zhukova

9/24/2020 – SPCN – Closing, Chair: Po-Lei Lee

13:00 – 14:30 Session II – *BCI & EEG Signal Processing*

Session II Chair:

1. NCU - Hung-Chang Lee, et al.
2. Pavlov Institute - Alexey Harauzov, et al
3. NCU - Kuo-Kai Shyu, et al.

14:30 – 15:30 Session III – *Brain Processing & Movements*

Session III Chair:

1. NCU – Hou-Tang Hsu, et al.
2. Pavlov Institute – Svetlana V. Murav'eva

15:30 – 16:00 Break

16:00 – 17:00 Keynote – Prof. 吳育德 Y. D. Wu

17:00 – 18:00 Keynote – Prof. Kirill Krinkin

18:00 – 18:30 SPCN Best Paper & BDBC Awards

18:30 Conference Closing

SPCN Session I – CNN Applied to Brain Images

Session Chair: Prof. Jinchang Ren, University of Strathclyde, Scotland, UK

1. The dual-purpose function of neurons in convolutional neural networks - Katerina Malahova, Pavlov Institute of Physiology, St. Petersburg, Russia
2. Transfer Learning to Predict Early Stages of Alzheimer's Disease Using DenseNet – Hoang (Mark) Nguyen, et al., University of Missouri – Kansas City (UMKC), USA
3. Facial Expression Processing in Neuronal Nets: Architecture and Large-scale Neural Networks Reconstruction of the Human Brain under Conditions of Indeterminacy, - O.V. Zhukova, Pavlov Institute of Physiology, St. Petersburg, Russia

SPCN Session II – BCI & EEG Signal Processing

Session Chair:

1. Classification of Four-class Motor Imagery Movements using Long Short-term Memory Network, Hung-Chang Lee et al., NCU, Taiwan
2. Electrophysiological Study of the Monkeys' Brain Rhythms, - Alexey Harauzov, et al., Pavlov Institute of Physiology, St. Petersburg, Russia
3. Implementation of a High frequency SSVEP based BCI using iterative filtering - empirical mode decomposition (IF-EMD), Kuo-Kai Shyu, et al., National Central University, Taiwan

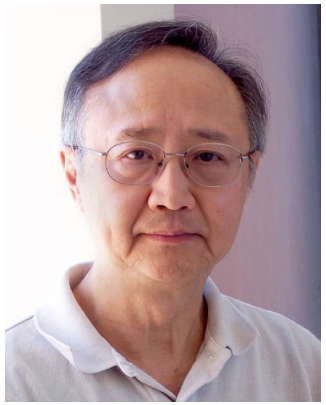
SPCN Session III – Brain Signal Processing & Movements

Session Chair:

1. Using Holo-Hilbert Spectral Analysis (HHSA) to Analyze EEG Oscillatory during Repetitive Movements, Hao-Teng Hsu, et al., NCU, Taiwan
2. Development of a Method for Differential Diagnosis of Schizophrenia and Depression Using the Method of Cognitive Visual Evoked Potentials, Svetlana V. Murav'eva (Muraveva), Pavlov Institute of Physiology, St. Petersburg, Russia

Keynote speakers

(a) Dr. Nan Chu



(b) Prof. James Lo

(c) Prof. Yuri Shelepin

(d) Prof. Men-Tzung Lo

(e) Prof. Yu-Te Wu

(f) Prof. Kirill Krinkin

(a) Dr. Nan Chu, CWLab International, Los Angeles, USA.
Date: 22 September, Time: 13:30-14:30 Taiwan Time, (UTC+8)
Topic: Challenges in Exploration of Neuroscience for Consumer Neurotechnology

(b) Prof. James Ting-Ho Lo, Univ. of Maryland Baltimore County, USA
Date: 22 September, Time: 17:00-18:00 Taiwan Time, (UTC+8)
Topic: Deep Learning and a New Approach for Machine Learning

(c) Prof. Yuri Shelepin, I. P. Pavlov Institute of Physiology, Russian Academy of Sciences, St. Petersburg, Russia
Date: 23 September, Time: 13:30-14:30 Taiwan Time, (UTC+8)
Topic: Conscious and Unconscious Vision

(d) Prof. Men-Tzung Lo, National Central University, Taiwan
Date: 23 September , Time: 14:30-15:30 Taiwan Time, (UTC+8)
Topic: A Real-World Implementation of Cloud-Based AI System for Large-Scale AFib Screening

(e) Prof. Yu-Te Wu, National Yang-Ming University, Taipei, Taiwan
Date: 24 September, Time: 16:00-17:00 Taiwan Time, (UTC+8)
Topic: Combining analysis of multi-parametric MR images into a convolutional neural network: Precise target delineation for vestibular schwannoma treatment planning

(f) Prof. Kirill krinkin, St. Petersburg Electrotechnical University (LETI).
Date: 24 September, Time: 17:00-18:00 Taiwan Time, (UTC+8)