2024 Fall Seminar　　Speaker information for 10/1

Speaker: Chou-Ching Lin (林宙晴)

CV

Chou-Ching K. Lin received a Bachelor degree of Medicine from National Yang-Ming University, Taipei, Taiwan in 1988 and an MSc and PhD in biomedical engineering from Case Western Reserve University, Cleveland, OH, USA in 1994 and 1997, respectively.　He is a professor in Department of Neurology and an adjunct professor in Department of Biomedical Engineering, National Cheng Kung University. His areas of interest include functional MRI, brain-computer interface (BCI), electrical stimulation of CNS and PNS, and neural network modelling of natural intelligence and artificial intelligence (AI).

Current:

1. Professor, Dept. Neurology, National Cheng Kung University (NCKU), Tainan, Taiwan
2. Joint Professor, Dept. Biomedical Engineering, NCKU
3. Division Convener, Center of Neuroscience Research, NCKU

Past:

1. Chairman of the Taiwan Society of Clinical Neurophysiology (2019.6 – 2022.8)
2. Council member of Taiwan Neurology Society (2016 – 2022)
3. Council member of Taiwan Neuroimmunology Medical Society (2020 – now)
4. Convener (學門召集人) of Neuroscience Discipline, Department of Life Sciences, MSTC (2021.1 – 2023.12)

References:

1. Huang HW, Tsai JJ, Su PF, Mau YL, Wu YJ, Wang WC, **Lin CCK***. Cortical excitability by transcranial magnetic stimulation as biomarkers for seizure controllability in temporal lobe epilepsy, Neuromodulation, 23(3): 399-406, 2020.
2. Tang CW, Ju MS*, **Lin CCK***. Morphological and hemodynamic changes of sciatic nerves and their vasa nervorum during circular compression and relaxation, J Biomech, 110: 109974, 2020.
3. Chien CY, Hsu SW, Lee TL, Sung PS, **Lin CCK***. Using artificial neural network to discriminate Parkinson's disease from other Parkinsonisms by focusing on putamen of dopamine transporter SPECT images, Biomedicines (MDPI), 9(1): 12, 2021.
4. Huang CH, **Lin CCK***. A novel density-based neural mass model for simulating neuronal network dynamics with conductance-based synapses and membrane current adaptation, Neural Networks, 143: 183-197, 2021.
5. Hu HW, Liu CH, Du YC, Chen KY, Lin HM*, **Lin CCK***. Real-time internet of medical things system for detecting blood leakage during hemodialysis using a novel multiple concentric ring sensor, Sensors, 22: 1988, 2022.

6. Huang CH, Wang PH, Ju MS*, **Lin CCK***. Using constrained square-root cubature Kalman filter for quantifying the severity of epileptic activities in mice, Biomedicines, 10:1588, 2022.

7. Huang CH, **Lin CCK***. New biophysical rate-based modeling of long-term plasticity in mean-field neuronal population models, Compt Biol Med, 163:107213, 2023.

TOPIC & ABSTRACT

Lecture Topic

Introduction of vagus nerve stimulation and its applications.

Abstract

Neuromodulation is an active research field in the neuroscience community. Among the many techniques of neuromodulation, vagus nerve stimulation is a novel technique that was used for reducing the frequency of seizures in the past and recently gained research momentum for many neuropsychogical disorders of the modern societies. The first part of this speech is a brief introduction of vagus nerve stimulation, emphasizing on the non-invasive modality. And the second part includes description about both what we have achieved and are still striving in this topic.