

SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
FACULTY OF ENGINEERING
Website: <https://www.eng.nus.edu.sg/ece/>

Area: Integrated Circuits & Embedded Systems

Host: Assoc Prof Jerald Yoo

TOPIC	:	Epilepsy Detection – What Is It About And How To Make It More Practical?
SPEAKER	:	Mr. Chne-Wuen TSAI Graduate Student, ECE Dept, NUS
DATE	:	Friday, 10 December 2021
TIME	:	10.00AM to 10.30AM
WEBINAR	:	Join Zoom Meeting https://nus-sg.zoom.us/j/82486055278?pwd=YmxXY1BXV0QyWkQvK1QwOUN0eDY2dz09 Meeting ID: 824 8605 5278 Passcode: 011968

ABSTRACT

Epilepsy is a disease affecting over 50 million people worldwide. Patients suffering from this disease have the possibility to loss body control for a certain period or even fall unconsciousness when the seizure happens. Although medicine could suppress the seizure events or cure the epilepsy for most of the patients, about 30% of the patients are immune to it. Recent studies have shown strong confidence in detecting the seizure events and suppressing it by performing electrical stimulation. However, for these devices operating with patient-specific classifier, patient-specific seizure patterns need to be known in prior due to the inter-patient variance. As the results, EEG samples need to be collected from the patients for the training purpose. Although these patient-specific classifiers have been largely verified with the online database, they might still be not practical enough. For those patients with less frequent seizure occurrence, the sample collecting session significantly preventing them from relieving of the seizure events through the seizure detection devices. The uncertainty in the seizure occurrence timing could lengthen the hospitalization, which induces the fiscal cost as well as time. To increase the usability and the practicality of the seizure detection devices, this seminar focuses on various ways to address this issue, including online learning, online tuning, and inter-patient classification.

BIOGRAPHY

Mr. Chne-Wuen TSAI received his B.Eng. degree in Biomedical Engineering from National University of Singapore, in 2018. He is now pursuing PhD in Electrical and Electronic Engineering Department, focusing on the energy-efficient circuit design for resource constrained biomedical applications at ECE department of NUS. His research interests include energy-efficient machine learning accelerator design, biomedical system-on-chip design.

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