

SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Faculty of Engineering

Website: <https://www.eng.nus.edu.sg/ece/>

Area: Signal Analysis & Machine Intelligence

Host: Asst. Prof. Mike Z. Shou

TOPIC	:	Semi-Supervised Learning for Neuroradiology Image Classification
SPEAKER	:	Ms Shafa Balam Graduate Student, ECE Dept, NUS
DATE	:	Friday, 30 July 2021
TIME	:	11.00AM to 12.00PM
WEBINAR	:	Zoom Meeting https://nus-sg.zoom.us/j/81066038012?pwd=ZFdac0ZkNHpPcVBNMmJENkM4RVlOQT09 Meeting ID: 810 6603 8012 Passcode: 224685

ABSTRACT

Deep learning approaches offer state-of-the-art performances in brain image analysis tasks, from haemorrhage detection to lesion segmentation. However, their requirement for resource-intensive annotation is a bottleneck for their development and deployment in clinical settings. Semi-supervised learning (SSL) frameworks leverage smaller sets of labelled samples alongside larger sets of unlabelled samples during model development to address the annotation burden. To date, few SSL methods have been explored for neuroradiology image classification. In this seminar, we introduce NoTeacher, a novel consistency-based semi-supervised learning framework derived from probabilistic graphical models. Unlike Mean Teacher, it does not rely on a time-ensembling component which may enforce self-consistency. We demonstrate how NoTeacher can handle common challenges in brain image classification such as multiple abnormalities and show that NoTeacher outperforms leading SSL methods under realistic evaluation settings.

BIOGRAPHY

Shafa is currently a Ph.D. student at the ECE Department of NUS attached to the Institute of Infocomm Research at A*STAR. Her research interests include deep learning with reduced annotation burden and reinforcement learning for medical imaging applications. Prior to joining NUS, she received her MEng degree in Biomedical Engineering from Imperial College London in 2019.

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