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: Dr Feng Jiashi

TOPIC	**:**	**Improving BERT with Span-based Dynamic Convolution**
SPEAKER	**:**	**Mr. Jiang Zihang** **Graduate student, ECE Dept, NUS**
DATE	**:**	**Friday, 17 July 2020**
TIME	**:**	**4.00PM to 4.40PM**
WEBINAR	**:**	**Join Zoom Meeting** **https://us02web.zoom.us/j/497447113?pwd=b1V4ZFJGaEZuTTJjZUVlekJCRkhpQT09** **Meeting ID: 497 447 113** **Password: 027731**

ABSTRACT

Pre-trained language models like BERT and its variants have recently achieved impressive performance in various natural language understanding tasks. However, BERT heavily relies on the global self-attention block and thus suffers large memory footprint and computation cost. Although all its attention heads query on the whole input sequence for generating the attention map from a global perspective, we observe some heads only need to learn local dependencies, which means existence of computation redundancy. We therefore propose a novel span-based dynamic convolution to replace these self-attention heads to directly model local dependencies. The novel convolution heads, together with the rest self-attention heads, form a new mixed attention block that is more efficient at both global and local context learning. We equip BERT with this mixed attention design and build a ConvBERT model. Experiments have shown that ConvBERT significantly outperforms BERT and its variants in various downstream tasks, with lower training cost and fewer model parameters.

BIOGRAPHY

Jiang Zihang is a PhD student at National University of Singapore (NUS), advised by Prof. Jiashi Feng. His research interest covers deep learning, natural language processing and computer vision. Currently he is doing projects about attention models in natural language processing.