

SHUO XIE

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EDUCATION

University of Chicago

M.S. in Statistics, Department of Statistics.

IL, USA

09/2021 - 06/2023

Peking University

B.S. in Statistics, School of Mathematical Sciences.

Exempt of college entrance exam based on CMO Gold Medal

Beijing, China

09/2016 - 07/2020

HONORS AND AWARDS

Gold Medal in Chinese Mathematical Olympiad (CMO)

12/2015

Rank 1st in Chinese Girls' Mathematical Olympiad (CGMO)

08/2015

PUBLICATIONS

Shuo Xie, Jiahao Qiu, Ankita Pasad, Li Du, Qing Qu, Hongyuan Mei. *Hidden State Variability of Pretrained Language Models Can Guide Computation Reduction for Transfer Learning.*

Findings of EMNLP 2022

RESEARCH EXPERIENCES

Toyota Technological Institute at Chicago

IL, USA

Supervised by Prof. Hongyuan Mei

Project: Multi-modal learning with Transformer architectures

07/2022 - Present

- Discovered that MLPs can be viewed as attention mechanism over an external knowledge entries.
- Design novel parameter-sharing mechanism to improve multi-modal learning of Transformer architectures such as BEIT-3.

Project: Parameter-efficient transfer learning

04/2022 - 06/2022

- Defined a metric to measure the “task-specialty” of each layer in a pretrained language model on a downstream classification task based on variability of hidden states.
- Pruned pretrained language models based on our metric, and the pruned models perform competitive to full models on GLUE tasks.

Beijing Kuaishou Technology Co Ltd

Beijing, China

Search Algorithm Intern

04/2021 - 08/2021

- Designed models to compute every user's general authority score to improve performance when using category authority score solely.
- Applied PageRank algorithm on users' follow relationship to compute each user's authority score.

University of Pennsylvania

PA, USA

Supervised by Prof. Edgar Dobriban

Project: Analysis of the randomized smoothing method

06/2019 - 09/2019

- Proved the randomized smoothing method in neural network can only get $d^{-1/2}$ robustness in l_∞ norm with any kind of symmetric noise.
- Discovered some interesting facts and side effects of randomized smoothing method.

SKILLS

Programming Languages and Frameworks

Python, R, Matlab