JIAXI WANG

website: https://wjxts.github.io/ • 159-0100-3371 • wjx20@mails.tsinghua.edu.cn / wjxtsw68@gmail.com

EDUCATION

Tsinghua University(THU), Beijing, China

PH.D., in Electronic Engineering   Advisor: Ji Wu   9/2020 - present

Tsinghua University(THU), Beijing, China

B.E., in Electronic Engineering   Advisor: Ji Wu   9/2016 - 6/2020

Core courses: *Matrix Analysis, Convex optimization, Introduction to High Dimensional Probability, Learning and Optimization - theory and practice, Introduction to Functional Analysis, Foundations of Measure Theory, Probability and Stochastic Process*

RESEARCH INTEREST

- Accelerating drug discovery based on data driven methods, especially deep learning
- Develop algorithmic debugging tools for deep learning to guide the design of neural network based on novel internal statistics during training

RESEARCH EXPERIENCE

USC, Summer Intern, Clustering Mouse Vocalization   **7**/2019- 8/2019

- Apply sparse subspace clustering(SSC) to cluster mouse vocalization. A first-author paper is published in ICASSP 2020.

THU, Detecting Obstructive Sleep Apnea Based on Speech Features   **9**/2019- 8/2020

- Extract discriminative audio features and apply machine learning approaches to detect Obstructive Sleep Apnea. A co-first-author paper is published in Journal Sleep and Breathing 2020.

THU, Understanding the Failure of Batch Normalization in NLP   **2**/2021-5/2022

- Analyze the statistics and training dynamics of BN to find its root of degraded performance in natural language processing, and propose Regularized BN to tackle the problem. A first-author paper is submitted to NeurIPS 2022 (accepted).

PUBLICATION

- Wang, Jiaxi & Mundnich, Karel & Knoll, Allison & Levitt, Pat & Narayanan,Shrikanth. "Bringing in the Outliers: A Sparse Subspace Clustering Approach to Learn a Dictionary of Mouse Ultrasonic Vocalizations" (ICASSP 2020)

Preprint: arxiv.org/abs/2003.05897

- Yiming Ding*; Jiaxi Wang*; Jiandong Gao; Qiang Fang; Yanru Li;Wen Xu; Ji Wu; Demin Han "Severity Evaluation of Obstructive Sleep Apnea Based on Speech Features" (Sleep and Breathing 2021)

Publication website: https://link.springer.com/article/10.1007/s11325-020-02168-0

 * indicates equal contribution

- Jiaxi, Wang & Ji, Wu & Lei, Huang "Understanding the Failure of Batch Normalization for Transformers in NLP" (NeurIPS 2022, accepted)

Preprint: http://arxiv.org/abs/2210.05153

LEADERSHIP AND ACTIVITIES

Captain of class football team   09/2017- 06/2019

Play football for my department   09/2016- 06/2019

SKILLS

Proficient in C/C++, Python, Matlab, PyTorch; Formula derivation