Zifeng Wang

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EDUCATION

Northeastern University Boston, MA

PhD Candidate in Computer Engineering, GPA: 4.0 / 4.0 Sep 2018 – May 2023 (expected)

- With a focus on Machine Learning and its applications.

Tsinghua University Beijing, China

Bachelor of Engineering in Electronic Engineering, GPA: 92 / 100 July 2018

- Ranked in top 5% of 233 students.

EXPERIENCE

Machine Learning Group, Northeastern University Boston, MA

Research Assistant Sep 2018 – Present

- Led the research topic of *Lifelong Machine Learning*, proposed and implemented several novel deep learning based algorithms in PyTorch and TensorFlow.
- Contributed to the development of *Radiofrequency Machine Learning System*, a software library for massive scale (10k+ classes, 7TB data) radiofrequency signal classification.
- Published papers in top-tier conferences (ICDM, NeurIPS, etc.).
- Involved in different research subgroups, presented and communicated with colleagues weekly.
- Analyzed and preprocessed data from different domains.

Channing Laboratory, Harvard Medical School Boston, MA

Collaborator Sep 2018 – Present

- Developed a novel deep learning model which combines biological domain knowledge for patients' smoking status prediction using RNAseq data, achieved state-of-the-art accuracy and better interpretability.
- Led the writing of a journal paper, submitted to PLOS Genetics.
- Collaborated with doctors and presented results to researchers with biology backgrounds.

i-Vision Group, Tsinghua University Beijing, China

Undergrad Research Assistant Sep 2017 – Mar 2018

- Implemented a novel algorithm to track multiple people in video clips using a deep reinforcement learning based approach with state-of-the-art performance, coauthored a paper published in ECCV.
- Helped conduct experiments with competing methods and did comprehensive literature review.

Vision Learning Group, University of Michigan Ann Arbor, Michigan

Visiting Student July 2017 – Sep 2017

- Implemented the End-to-End Hourglass model, a deep learning model for instance segmentation problem in computer vision, achieved state-of-the-art results on MSCOCO dataset.
- Contributed to refactoring and optimization of the codebase with multiple collaborators, improved the performance by 8% in mean average precision and 80% in running speed.

Data Science & Intelligence Lab, Tsinghua University Beijing, China

Undergrad Research Assistant Feb 2016 – July 2016

- Processed 67 million online shopping logs from 2 million users via Hadoop.
- Analyzed customers' online shopping behavior by performing co-clustering on the processed data and coauthored a journal paper.

LEADERSHIP

Technology & Education: Connecting Cultures, Tsinghua University — Beijing, China
Vice President — Feb 2016 – July 2016

- Led the activity organizing team of TECC with 10+ team members.
- Organized scientific lectures with 100+ audience.

AWARDS

Best Paper Award, IEEE DySPAN 2019 — Newark, NJ
Travel Award, IEEE DySPAN 2019 — Newark, NJ
Travel Award, NeurIPS 2019 — Newark, NJ
Dean's Fellowship, Northeastern University, 2018 — Boston, MA
Evergrande Scholarship, Tsinghua University, 2016 — Beijing, China
Outstanding Undergraduate Scholarship, Tsinghua University, 2016 — Beijing, China

SELECTED PUBLICATIONS

Conference Papers

- **Zifeng Wang***, Tong Jian*, Kaushik Chowdhury, Yanzhi Wang, Jennifer Dy, and Stratis Ioannidis. "Learn-Prune-Share for Lifelong Learning". IEEE International Conference on Data Mining (ICDM 2020).
- **Zifeng Wang**, Batool Salehi, Andrey Gritsenko, Kaushik Chowdhury, Stratis Ioannidis, and Jennifer Dy. "Open-World Class Discovery with Kernel Networks". IEEE International Conference on Data Mining (ICDM 2020).
- Aria Masoomi, Chieh Wu, Tingting Zhao, **Zifeng Wang**, Peter Castaldi, Jennifer Dy. "Instance-wise Feature Grouping". Conference on Neural Information Processing Systems (NeurIPS 2020).
- Andrey Gritsenko*, **Zifeng Wang***, Jennifer Dy, Kaushik Chowdhury, and Stratis Ioannidis. "Finding a 'New' Needle in the Haystack: Unseen Radio Detection in Large Populations Using Deep Learning". IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN 2019), **Best Paper Award**.
- Liangliang Ren, Jiwen Lu, **Zifeng Wang**, et al. "Collaborative Deep Reinforcement Learning for Multi-Object Tracking". In Proceedings of the European Conference on Computer Vision (ECCV 2018).

Journal Papers

- **Zifeng Wang**, Aria Masoomi, et al. "Improved Prediction of Smoking Status via Isoform-Aware RNAseq Deep Learning Models". Submitted to PLOS Genetics, under review.
- Tong Jian, Yifan Gong, Zheng Zhan, Runbin Shi, Nasim Soltani, **Zifeng Wang**, et al. "Radio Frequency Fingerprinting on the Edge". Submitted to IEEE Transactions on Mobile Computing, under review.
- Tong Jian, Bruno Rendon, Emmanuel Ojuba, Nasim Soltani, **Zifeng Wang**, et al. "Deep Learning for RF Fingerprinting: A Massive Experimental Study". IEEE Internet of Things Magazine 3 (1), 50-57.
- Huan Yan, **Zifeng Wang**, Tzu-Heng Lin, Yong Li, and Depeng Jin. "Profiling users by online shopping behaviors." Multimedia Tools and Applications (2017): 1-11.

SKILLS

- Research: Machine Learning, Computer Vision, AI in Healthcare, AI in Communications.
- Software: PyTorch, TensorFlow, scikit-learn, Apache Spark, Apache Hadoop.
- Programming Languages: Python, C/C++, JAVA, MATLAB.
- Personal: Fast-learning, Problem-solving, Teamwork, Interpersonal Communication.