Jifan Zhang

CS Ph.D. Student at University of Wisconsin-Madison

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Education

Sep 2021 - Present University of Wisconsin, Madison

Ph.D. in Computer Science
Research interest: large-scale and data-efficient learning.
Advisor: Robert Nowak

Sep 2016 - Mar 2021 University of Washington, Seattle

Mar 2021 M.S. in Computer Science, GPA: 3.98 / 4.0
Mar 2019 B.S. in Computer Science (minor in Mathematics), GPA: 3.94 / 4.0
Advisor: Kevin Jamieson

Publications

* Indicates equal contribution

Refereed

- **LabelBench: A Comprehensive Framework for Benchmarking Label-Efficient Learning**
  Jifan Zhang*, Yifang Chen*, Gregory Canal, Arnav Das, Gantavya Bhatt, Stephen Mussmann, Yinglun Zhu, Simon Shaolei Du, Kevin Jamieson, Robert D Nowak.
  Workshop on Adaptive Experimental Design and Active Learning in the Real World (at NeurIPS 2023).
- **Algorithm Selection for Deep Active Learning with Imbalanced Datasets**
  Jifan Zhang, Shuai Shao, Saurabh Verma, Robert Nowak.
  Advances in Neural Information Processing Systems 36 (NeurIPS 2023).
- **A Better Way to Decay: Proximal Gradient Training Algorithms for Neural Nets**
  Liu Yang, **Jifan Zhang**, Joseph Shenouda, Dimitris Papailiopoulos, Kangwook Lee, Robert D. Nowak.
  14th International OPT Workshop on Optimization for Machine Learning (at NeurIPS 2022).
- **GALAXY: Graph-based Active Learning at the Extreme**
  Jifan Zhang, Julian Katz-Samuels, Robert Nowak.
  Proceedings of the 39th International Conference on Machine Learning (ICML 2022).
  Part of this work has been deployed in production at Meta through my internship project.
- **Improved Algorithms for Agnostic Pool-based Active Classification**
  Julian Katz-Samuels, **Jifan Zhang**, Lalit Jain, Kevin Jamieson.
  Proceedings of the 38th International Conference on Machine Learning (ICML 2021).

Preprint

- **Learning from the Best: Active Learning for Wireless Communications**
  Nasim Soltani*, **Jifan Zhang***, Batool Salehi, Debashri Roy, Robert Nowak, Kaushik Chowdhury.
  Under review (revision) at IEEE Wireless Communications Magazine (2023).
- **Learning to Actively Learn: A Robust Approach**
  Jifan Zhang, Lalit Jain, Kevin Jamieson.
  arXiv:2010.15382. October 2020.

Industry Experience

May 2022 - Dec 2022 Meta Core Data Science (CDS), Graph Science & Statistics Team
Research Intern / Part-time Student Researcher

- Research and development of large scale Active Learning system.
- The internship project (among two others) received an internal shoutout from Mark Zuckerburg.

May 2021 - Aug 2021 Google, Ads pCTR Team
Software Engineering Intern

- Research on improving Ad click prediction training efficiency by subselecting useful data points based on information theoretic model uncertainty.
- Conducted large-scale algorithmic learning experiments on hundreds of billions data points

June 2020 - Sep 2020 Google, Geo 3D Reconstruction Team
Software Engineering Intern

- Researched on and implemented multi-view texturing algorithms for Google Map's 3D reconstructed models at scale

June 2019 - Sep 2019 Facebook, ML Data Platform Team
Software Engineering Intern

- Prototyped distributed systems for large scale Machine Learning services of data pre-processing
- Constantly communicated with and employed services from five different teams

Research Experience

Sep 2021 - Present Wisconsin Institute of Discovery
Research Assistant, advised by Professor Robert D. Nowak

- Data-efficient learning and optimization in deep learning and/or with statistical guarantees.

Mar 2019 - Mar 2021 Washington AI Lab
Research Assistant, advised by Professor Kevin Jamieson

- Working on both theoretical and empirical perspectives of active learning algorithms
- Proposed novel learning to actively learn procedure for training optimal policy while obtaining same level of robustness as theoretically justified ones

June 2017 - June 2019 Robotics and State Estimation Lab
Research Assistant, advised by Tanner Schmidt and Professor Dieter Fox

- Built multi-tasking deep learning structures for computer vision and robotics tasks with both Back Propagation and Equilibrium Propagation (for energy based models)

June 2018 - Sep 2018 SAMPL Group
Research Assistant, advised by Professor Zachery Tatlock

- Worked on the Relay project (part of TVM, a deep learning library). Designing better intermediate tensor representation for the compiler

Teaching

Jan 2017 - Mar 2021 University of Washington, Allen School of Computer Science and Engineering
Teaching Assistant

- Graduate Courses: CSE 599G1 Deep Learning, CSE 546 Machine Learning
- Undergraduate Courses: CSE 446 Machine Learning, CSE 473(major)/415(non-major) Artificial Intelligence, CSE 341 Programming Languages
- Assist with overall course planning and development; design homework and exam problems; lead and prepare weekly sections; hold weekly office hours

Awards

- **Microsoft Endowed Scholarship: recipient**
- **ACM-ICPC (Pacific Northwest Region): 5th place**
- **William Lowell Putnam Mathematical Competition: ranked 439 as sophomore and 733 as freshman**
- **UW Honors Calculus Award: One student per year awarded by the math department**