

Jifan Zhang

CS Ph.D. Student at University of Wisconsin

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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

Refereed Publication

- **LabelBench: A Comprehensive Framework for Benchmarking Label-Efficient Learning**
Jifan Zhang*, Yifang Chen*, Gregory Canal, Stephen Mussmann, Yinglun Zhu, Simon Shaolei Du, Kevin Jamieson, Robert D Nowak.
Data-centric Machine Learning Research (DMLR) Workshop (at ICML 2023).
- **Algorithm Selection for Deep Active Learning with Imbalanced Datasets**
Jifan Zhang, Shuai Shao, Saurabh Verma, Robert Nowak.
Data-centric Machine Learning Research (DMLR) Workshop (at ICML 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. The project (among two other projects) received an internal shoutout from Mark Zuckerberg.
- **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 to Actively Learn: A Robust Approach**
Jifan Zhang, Lalit Jain, Kevin Jamieson.
arXiv:2010.15382. October 2020.

Industry Experience

May 2022 - Meta Core Data Science(CDS), Graph Science & Statistics Team

- Dec 2022** *Research Intern / Part-time Student Researcher*
- Research and development of large scale Active Learning system.
- May 2021 -** Google, Ads pCTR Team
Aug 2021 *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 -** Google, Geo 3D Reconstruction Team
Sep 2020 *Software Engineering Intern*
- Researched on and implemented multi-view texturing algorithms for Google Map's 3D reconstructed models at scale
- June 2019 -** Facebook, ML Data Platform Team
Sep 2019 *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 -** Wisconsin Institute of Discovery
Present *Research Assistant, advised by Professor Robert D. Nowak*
- Data-efficient learning and optimization in deep learning and/or with statistical guarantees.
- Mar 2019 -** Washington AI Lab
Mar 2021 *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 -** Robotics and State Estimation Lab
June 2019 *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 -** SAMPL Group
Sep 2018 *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 -** University of Washington, Allen School of Computer Science and Engineering
Mar 2021 *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**