Jinjin Zhao

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INTERESTS

Systems for Machine Learning, Data Provenance, DevOps, Databases

EDUCATION

University of Chicago   2025 (est.)
Computer Science, PhD, Advisor: Sanjay Krishnan

University of Chicago   August 2022
Computer Science, Masters

Princeton University, *Summa Cum Laude*   June 2019
Computer Science, Bachelor of Science in Engineering
Statistics and Machine Learning, Minor

SELECTED PROJECTS

Behavior Based Semantic Capture for Data Tables. Annotating Python and Jupyter Notebook execution to automatically store code changes when the program is ran. Organizing experiments with University of Chicago undergraduate classes to capture a history of work for data science assignments with this annotation. Using those experiments to predict/recommend future behavior, and analyze table column semantics.

Fine Grained Provenance Storage and Query for Arrays. Presenting a query and storage framework for fine-grained provenance in data science. Fine-grained provenance is defined as cell-to-cell contribution lineage through a set of array operations. Introducing a new compression algorithm and query optimization techniques that improve storage space and query time by up to 700x and 200x respectively.

Object Recognition Error Classification in Complex Environments. Running object detection deep learning models in real world video deployment scenarios. Classifying error detected with expert hand labels, and testing preliminary low-dimensional unsupervised error classification techniques.

High Level Domain-Agnostic Code Analysis in Python. Designing a high-level API to parse Python code and store metadata during code analysis and execution, independent of task and type of metadata.

WORK EXPERIENCE

Research Intern   **Princeton Plasma Physics Lab**
June 2018 - July 2018   Princeton, NJ

Software Engineering Intern   **Facebook**
June 2017 - August 2017   Seattle, WA

| | **Facebook University Intern** | **Facebook** |
| | June 2016 - August 2016 | Menlo Park, CA |

TEACHING
EXPERIENCE

CDAC Lab Coordinator   **University of Chicago**
May 2020 - August 2020   Chicago, IL
Coordinated data science research summer program.
Led machine learning team (12 students).

Teaching Assistant   **CMSC 16100, 21800**
University of Chicago   Autumn 2019, 2020
Honors Introduction to Programming, I.
Data Science For Computer Scientists

Teaching Assistant   **COS 397/497**
Princeton University   Fall 2018
Mobile Computing Design for Assistive Technology.

PUBLICATIONS/
PRESENTATIONS

Jinjin Zhao, Sanjay Krishnan. *System for Fine-Grained Provenance (temp. title)*, 2023. [under submission].

Shinan Liu, Tarun Mangla, Ted Shaowang, **Jinjin Zhao**, Sanjay Krishnan, Nick Feamster. *Interaction Recognition in IoT Environments with Multimodal Machine Learning (temp. title)*, 2023. [under submission].

Siyuan Xia, Zhiru Zhu, Chris Zhu, **Jinjin Zhao**, Kyle Chard, Aaron J. Elmore, Ian Foster, Michael Franklin, Sanjay Krishnan, Raul Castro Fernandez. *Data Station: Delegated, Trustworthy, and Auditable Computation to Enable Data-Sharing Consortia with a Data Escrow.* VLDB 2022. [Paper].

Ted Shaowang*, **Jinjin Zhao***, Stavos Sintos, Sanjay Krishnan. *Towards Causal Query Answering for Debugging Video Analytics Systems.* HILDA 2022. [Short Paper].

Emi Zeger, Florian Laggner, Alessandro Bortolon, Cristina Rea, Orso Meneghini, Samuli Saarelma, Brian Sammuli, Sterling Smith, **Jinjin Zhao**. *Prediction of DIII-D Pedestal Structure From Externally Controllable Parameters.* IEEE Trans. Plasma Sci. 2021. [Paper].

Jinjin Zhao, Egemen Kolemen, Xiaoyan Li, Florian Laggner. *Experimental Based Pedestal Prediction using Machine Learning.* American Physical Society (APS) Division of Plasma Physics 2018. [Poster].

ACTIVITIES/
AWARDS

2022 University Unrestricted Fellowship, University of Chicago
OSDI '20 Diversity Grant, USENIX Association
Curriculum/Social Minister, UChicago CS Graduate Student Ministry
2019 Neubauer Graduate Scholarship, University of Chicago
ChatterWorks, 2016 YHacks 1&1 Prize Winner