Ellen Su

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Education

New York University   New York, NY
Doctor of Philosophy in Cognitive Science   *Fall 2024 - present*
- Relevant coursework: mathematical statistics, computational linguistics

Princeton University   Princeton, NJ
Bachelor of Science in Computer Science   *2019 - 2023*
- Certificate in Applied Math
- Thesis: *Revealing the Priors of Deep Learning Models Through Iterated Learning*

Research Experience

Robust Intelligence   San Francisco, CA
Research Intern, PI: Amin Karbasi   *Summer 2024*
- Developed a decomposition jailbreak to extract training data from production LLMs
- Wrote and published a first author preprint by the end of internship (August 2024)

Broad Institute of MIT and Harvard   Cambridge, MA
ML Research Associate, PIs: Anne Carpenter, Shantanu Singh   *2023 - 2024*
- Used graph neural networks to advance drug target interaction (DTI) discovery
- Produced a co-first author spotlight publication in NeurIPS (June 2024) and second author publication in Nature Communications (March 2024)

Princeton University   Princeton, NJ
Senior Thesis, PI: Tom Griffiths   *2022 - 2023*
- Used convolutional neural networks (CNNs) as learning agents in an iterated learning chain to identify potential inductive biases in the models
- Observed how machine priors manifested in their sequential decision making behavior
- Presented results at the Program in Applied and Computational Mathematics Symposium

Junior Paper, PI: Ben Raphael   *2021 - 2022*
- Contributed to a machine learning algorithm that predicts copy number variation mutations from spatial transcriptomics data

Publications

Su, E., Vellore, A., Chang, A., Mura, R., Nelson, B., Kassianik, P., & Karbasi, A. (2024). Extracting Memorized Training Data via Decomposition. *ArXiv, abs/2409.12367*

Su, E., Arevalo, J., Carpenter, A., & Singh, S. (2024). MOTIVE: A Drug-Target Interaction Graph For Inductive Link Prediction. *Neural Information Processing Systems. (spotlight)*

Arevalo, J., **Su, E.**, Ewald, J.D., van Dijk, R., Carpenter, A., & Singh, S. (2024). Evaluating batch correction methods for image-based cell profiling. *Nature Communications, 15.*

Fellowships and Awards

2023   Outstanding Student Teaching Award, Princeton Computer Science
2022   Grace Hopper Celebration Grant, Princeton Computer Science
2021   Undergraduate Research Summer Fellowship, Princeton University
2020   International Internship Program Research Grant, Princeton University

Work Experience

Robust Intelligence   San Francisco, CA
Machine Learning Engineer Intern   *Summer 2024*
- Researched and proposed implementation plan for multilingual support in AI firewalls
- Built a multilingual dataset of prompt injections; benchmarked and evaluated multilingual language models in terms of performance and latency

J.P. Morgan Chase & Co   Chicago, IL
AI & Data Science Analyst   *Summer 2022*
- Created a decision-making tool (with Python, SQL, Alteryx, and Tableau) for the email marketing team to optimize their campaigns
- Picked up manager's responsibilities during an unexpected transition of leadership and trained the incoming associate

Teaching Experience

Princeton Tutoring   Princeton, NJ
Tutor   *2021 - 2024*
- Teaching math, physics, and computer science to middle and high school students

Princeton Computer Science   Princeton, NJ
COS495 Undergraduate Course Assistant   *Spring 2023*
- Assisted course staff, graded homework assignments, and answered student questions on course structure, assignments, and deliverables for Web3 and Blockchain course

Service

Princeton First Aid and Rescue Squad   Princeton, NJ
Emergency Medical Technician   *2021 - 2023*
- Served as a first responder; stabilized, medicated, and transported patients
- Certified by National Registry of Emergency Medical Technicians (NREMT)

Skills and Languages

Analytical	Machine learning, cognitive science, artificial intelligence
Software	MS Office, Teradata, Alteryx, Tableau, AutoCAD
Languages (program)	Python (Pytorch, Tensorflow), Java, C, SQL, CSS/HTML
Languages	English (native), Mandarin (native), Spanish (advanced)
Interests	Reading, running, cooking, and crosswords