Ellen Su

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Education

New York University *2024 - present*

- Ph.D. Student, Center for Data Science
- Research interests: representation learning, NLP, cognitive science
- Advisor: Todd Gureckis

Princeton University *2019 - 2023*

- B.S. Computer Science
- Minors: Applied Math and Cognitive Science
- Advisor: Tom Griffiths
- Thesis: *Revealing the Priors of Deep Learning Models Through Iterated Learning*

Publications

Su, E., Legris, S., Gureckis, T.M., & Ren, M. (2025). Opinion: Learning Intuitive Physics Requires More than Visual Data. *NeurIPS Embodied World Models for Decision Making Workshop 2025.*

Su, E., Ho, M.K., & Gureckis, T.M. (2025). Integration of Language and Experience via the Instructed Bandit Task. *Proceedings of the 47th Annual Meeting of the Cognitive Science Society, CogSci 2025.*

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. *NeurIPS Datasets and Benchmarks. (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.*

Other 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 inductive biases in the models

- Demonstrated that machine priors manifested in sequential decision making behavior
- Presented results at the Program in Applied and Computational Mathematics Symposium

Junior Paper, PI: Ben Raphael *2021 - 2022*

- Developed to a machine learning algorithm that predicts copy number variation mutations from spatial transcriptomics data

Fellowships and Awards

2024	Spotlight, NeurIPS 2024 (top 2.08% of submissions) *MOTIVE: A Drug-Target Interaction Graph For Inductive Link Prediction.*
2023	Princeton CS Outstanding Student Teaching Award ($1000)
2022	Princeton CS Grace Hopper Celebration Grant ($2500)
2021	Princeton Summer Research Fellowship ($5000)

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

Teaching Experience

Princeton Tutoring Princeton, NJ

Math/Physics/CS Tutor *2021 - 2024*

Princeton Computer Science Princeton, NJ

COS495 Undergraduate Course Assistant *Spring 2023*

Service

Princeton First Aid and Rescue Squad Princeton, NJ

National Registry of Emergency Medical Technicians *2021 - 2023*

- Served as a first responder; stabilized, medicated, and transported patients

Skills and Languages

Interests	Machine learning, cognitive science, artificial intelligence
Languages (program)	Python (Pytorch, Tensorflow), Java, Javascript, C, SQL, CSS
Languages	English (native), Mandarin (native), Spanish (advanced)
Interests	Reading, running, cooking