

Luke Shao

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EDUCATION

Cornell University; Ithaca, NY

Aug. 2022 - May 2026

B.S. Computer Science; Minor in Data Science

Relevant Coursework: Object-Oriented Programming and Data Structures, Analysis of Algorithms, Discrete Structures, Practical Tools for Data Science and Machine Learning, AI Reasoning, Computer System Organization

EXPERIENCE

Mach9 Digital, *Software Engineer Intern*; New York, NY

Feb. 2024 - Present

- Built a RAG-based chat assistant for an enterprise client's customer support team using LangChain and OpenAI APIs.
- Programmed a web app using React to host the assistant, saving the client 25 hrs/week writing inquiry responses.
- Support operations team with client reporting (Brunello Cucinelli and Philip Morris USA): analyze social-listening datasets using Excel and Python, and draft marketing insight reports.

Monmouth University, *Machine Learning Research Assistant*; Long Branch, NJ

May 2023 - Jan. 2024

- Refined 2 reinforcement learning algorithms using PyTorch to teach a robotic nurse to navigate a hospital floor.
- Programmed a user interface using Python and Gym to display robot actions and environment.
- Designed and implemented interface features based on literature review and 10 user interviews.
- Submitted a co-authored paper to the IEEE International Conference on Cyber-physical Social Intelligence.

NASA, *Data Science Intern*; Austin, TX

May 2021 - Aug. 2021

- Used machine learning methods to predict mosquito and West Nile Virus prevalence in Cook County, IL.
- Scraped datasets (Collect Earth Online and GLOBE) for geography and climate data, organized data using Python pandas, and created data visualizations using Matplotlib and Seaborn.

EXTRACURRICULARS

Cornell Center for Teaching Innovation, *Creative Technologist*; Ithaca, NY

Aug. 2024 - Present

- Assist professors in integrating Cornell's Generative AI toolkit onto teaching platforms like Canvas and Ed Discussion.
- Building a custom RAG-based chatbot fine-tuned on course-specific information using Azure APIs and LangChain.

Cornell Sustainable Design, *Research Lead*; Ithaca, NY

Aug. 2023 - Present

- Lead research on Cherry St., a neglected neighborhood in Ithaca, under a Systems Engineering team.
- Conduct data analysis, user research, and "empathy fieldwork" of the region, consolidating results in a 65-page proposal presented to the Ithaca City Planning board and city stakeholders.

Praxis Consulting, *Technology Consultant*; Ithaca, NY

Aug. 2023 - Aug. 2024

- Perform technology and brand consulting for two companies: a Salesforce solutions startup and a local food vendor.
- Collaborate with an 8-person team to re-design and develop each company's website using Figma, HTML and CSS.

SKILLS & TECHNOLOGIES

Programming Languages: Python, Java, C, SQL, HTML, CSS, JavaScript, OCaml

Frameworks & Tools: pandas, NumPy, PyTorch, MySQL, React, Docker, Gym, Github, Visual Studio Code, Jupyter

Other: Microsoft Office (Excel, Powerpoint, Word), Google Workspace, Tableau, Figma, Canva

ADDITIONAL INFORMATION

Project: Sewer Navigation Game

Sept. 2023 - Jan. 2024

- Developed a Java game where players navigate a complex maze and collect treasures under a time constraint.
- Applied Dijkstra's algorithm to maximize points collected, and implemented concurrency to optimize game runtime.

Project: Data Analysis of Chronic Disease Indicators

Jan. 2024 - May. 2024

- Conducted in-depth multiple linear regression analysis of 30+ potential predictors of diabetes from CDC datasets.

Awards: Out for Undergrad Digital (O4U), D.E. Shaw Connect, National Merit Scholar, NJ Governor's STEM Scholar

Interests: antiques, vintage clothing, movies, basketball, camping, tea