EZRA JOHNSON

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EDUCATION

Bachelor of Computer Science, California Institute of Technology   December 2025

PUBLICATIONS

- **In Submission**: Assessing Equity of Cascading Failure Risk in California Energy Grid   July 2025

RESEARCH EXPERIENCE

NSF REU Summer Researcher   June 2025 - August 2025
University of Massachusetts Amherst   *Amherst, MA*

- Proved bounds for the robustness and consistency of uncertainty-quantified learning-augmented algorithms for certain online problems.
- Scripted simulation code to test potential algorithm ideas on a carbon forecasting dataset.
- Presented work at a summer poster session.

Undergraduate Researcher   March 2025 - June 2025
Caltech   *Pasadena, CA*

- Proposed and executed an independent project on the equity of cascading power failures in the California energy grid under Professor Adam Wierman.
- Presented findings at the Caltech department poster session.
- Submitted findings to the MIT Undergraduate Research Technology Conference.

Undergraduate Researcher   January 2024 - March 2025
Caltech   *Pasadena, CA*

- Collaborated with Professor R. Michael Alvarez to design and carry out a project on identifying climate change misinformation in multi-modal video content using machine learning in the Alvarez Political Science group.
- Submitting findings to European Congress on Disinformation and Fact-Checking.

INDUSTRY EXPERIENCE

Software Engineer Intern   June 2024 - Sept 2024
Stripe   *New York, NY*

- Implemented personalized suggestions for the Universal Help widget to create a unique experience for support users on the Merchant Support Experience team using Ruby and TypeScript.
- Designed the personalization modules and wrote a proposal that went through design review.
- Generated machine learning predictions for over 170,000 support cases producing valuable data to reduce support agent costs.

Software Engineer Intern   June 2023 - Sept 2023
Stripe   *New York, NY*

- Adapted existing API and database models to provide essential transaction information to clients using Apache Kafka and Ruby.
- Updated the Stripe Dashboard in React to show my changes to the models.
- Saved company tens of man-hours per week and followed through on a highly requested client feature.

Software Engineer Intern June 2022 - Sept 2022

Meta (Facebook) *New York, NY*

- Developed the backend of a new feature for Instagram Stories as a server engineer using Django.
- Onboarded full-time engineers onto the project to take over after my internship duration.
- Presented on my work in an org-wide event.

STEP Intern June 2021 - Sept 2021

Google *Remote*

- Developed an internal web application using JavaScript, Google Closure Templates, a microservice framework, and more on the Google Lens in Photos Team.
- Collaborated closely with another intern to develop the product, and conducted code reviews.
- Utilized the Mercurial version management system.

AWARDS

- Awarded an NSF REU through the Computing for an Equitable Energy Transition at the University of Massachusetts Amherst.
- Earned a Southern California Intercollegiate Athletic Conference All-Conference Discus Award.

PROJECTS

Machine Learning for Medical Image Diagnosis. Developed a machine learning pipeline to produce a model that could identify 9 diseases from the CheXpert chest X-ray dataset in a small team. Utilized primarily Python and PyTorch.

Mobile Robot. Constructed a mobile robot capable of localization, mapping, and planning around obstacles in a team of two. Utilized Python and ROS2.

TECHNICAL SKILLS

Programming Languages	Python, Ruby, Java, C, OCaml, JavaScript, HTML, CSS
Tools	Git, Mercurial, NumPy, React, NextJS, PyTorch