Annabel Ng

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Education

UC Berkeley Berkeley, CA

B.S. in Electrical Engineering and Computer Science - GPA 3.72 *Expected May 2026*

- **Coursework:** Machine Learning, Algorithms, Computer Security, Data Structures, Computer Architecture, Linear Algebra and Optimization Models, Discrete Math and Probability, Designing Information Devices I/II
- **Clubs:** Machine Learning @ Berkeley, Association of Women in EECS, Society of Women Engineers
- **Awards:** Cal Alumni Association Leadership Scholar, Google Cloud Next '23 Student Innovator

Experience

Autodesk May 2024 – Present

Machine Learning Engineering Intern *San Francisco, CA*

- Developed a Wiki content categorization pipeline using GPT-4 that processed over 15,000 pages to identify confidential information such as API keys, usernames/passwords, and IP hostnames, successfully flagging 500 pages
- Finetuned and deployed text classification models (DeBERTa and Llama3) using AWS Lambda to automatically route Autodesk User Management and Support Jira tickets, reducing engineer overhead by 80% per ticket
- Selected among all Autodesk interns to demo both projects in a fireside chat with the Chief Information Officer

AI Racing Tech: Top US Indy Autonomous Racing Team March 2024 – Present

Perception Team Researcher *Berkeley, CA*

- Implemented an image labeling pipeline using YOLOv7 to detect opponent Formula 1 cars across 40 TB of data
- Designed a SQL database schema for storing labeled images and rosbag metadata for finetuning YOLOv8

Cubic Transportation Systems June 2023 – Aug 2023

Software Engineering Intern *Georgetown, TX*

- Developed a full-stack web application for the Boston MBTA transportation system using Flask and React to monitor over 300 devices, as well as various sales and ridership statistics
- Deployed a separate web app for tracking the location of over 100 active bus and subway trains across 6 different MBTA transit lines with real-time refresh every 2 minutes

Redwood Center for Theoretical Neuroscience Oct 2022 – Present

Undergraduate Machine Learning Researcher *Berkeley, CA*

- Optimized a convolutional sparse coding model on the MNIST dataset and incorporated computational features to improve memory usage and efficiency in image factorization tasks (published in NICE '24)

Leadership

Machine Learning @ Berkeley Sept 2022 – Present

Workshops Lead and Education Officer *Berkeley, CA*

- Created computer vision content for Udacity's Generative AI Nanodegree program, including video lectures, slidedecks, and interactive demos focusing on convolutional neural networks, transfer learning, and foundation models like YOLO
- Spearheaded free inaugural all-day high school bootcamp to introduce 50+ under-served local high school students to machine learning through workshops and computer vision projects
- Partnered with IBM to develop machine learning content for their Developer Learning Path Resources

Projects

Provable Robustness for Deep Classifiers | *Python, PyTorch* May 2024

- Implemented the Fast Gradient Signed Method (FGSM) adversarial approximation attack on a trained MNIST classifier and created a robust training regime by optimizing over the non-convex dual value

Publications

- C. Kymn*, S. Mazelet*, **A. Ng**, D. Kleyko, and B. Olshausen. "Compositional Factorization of Visual Scenes with Convolutional Sparse Coding and Resonator Networks". *In: Proc. of Neuro Inspired Computational Elements (NICE) Conference. 2024*

Technical Skills

Languages & Tools: Python, Java, C, SQL, JavaScript, HTML/CSS, Git, Unix, AWS Lambda, Jupyter
Frameworks & Libraries: TensorFlow, PyTorch, React, Node.js, Flask, LangChain, Pandas, Hugging Face, Matplotlib