

Colin Zhao

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EDUCATION

University of Pennsylvania

Bachelor of Engineering, Major in Computer Science, Minor in Economics

Philadelphia, PA

Expected May 2028

- Relevant Coursework: Linear Algebra, Data Structures and Algorithms, Introduction to Computer Systems, Programming Languages and Techniques
- 3.7/4.0 GPA

EXPERIENCE

Researcher

October 2025 - Present

Penn Medicine - Radiology AI Implementation Lab

Philadelphia, PA

- Engineering an agentic AI orchestration system integrating open-source LLMs (e.g., MedGemma) into radiology report pipelines, enabling automated reasoning, summarization, and clinician-in-the-loop decision support across 10k+ de-identified patient records.

Software Engineer

Penn Aerial Robotics

September 2025 - Present

Philadelphia, PA

- Developed a UAV computer vision payload detection algorithm leveraging binary thresholding with **OpenCV**.
- Built an internal position representation from drone camera data with **ROS2** integration.

Founding Engineer

Collegiate.ai

June 2025 - August 2025

New York, NY

- Led the development of a **full-stack** college application platform using **Next.js** and Supabase, implementing features including personalized college recommendations, essay review, and strategic guidance.
- Developed LLM integration using Google's Gemini API for natural language processing, implementing document analysis, essay optimization, and personalized content generation.

Software/Data Center Build Intern

June 2025 - August 2025

Antalpah

Atlanta, GA

- Automated deployment and maintenance workflows for 630+ water-cooled GPU systems using AI agents built with **LangChain** and Python, improving configuration consistency and reducing manual setup time by 25%.
- Collaborated with engineers to configure and secure servers, firewalls, and switches, applying knowledge of TCP/IP, VLANs, and access control for reliable system integration.

Project Development Director

June 2023 - June 2024

AiGoLearning

Princeton, NJ

- Led a team of 4 in developing and maintaining educational technology projects, including automated tools and web applications for the "StemForAll" initiative.
- Designed and deployed a **Discord bot in Python** utilizing REST APIs and asynchronous event handling, reducing applicant response times by **40%**.

PROJECTS

Macro Logger - Nutrition Tracking Mobile App | SQL, ReactJS/React Native

June 2025

- Developed a **full-stack mobile application** using **React Native** and **Node.js** that allows users to track daily nutrition intake using integration with the USDA Food Data Central API, with secure authentication via Clerk
- Built a RESTful API backend with **PostgreSQL** database integration, middleware rate limiting, and efficient data aggregation for nutritional summary analytics

Real-Time Gaze and Blink Tracking System | Python, OpenCV

June 2025

- Developed a computer vision system in Python using **OpenCV** and MediaPipe to track eye gaze and detect blinks in real time, including calibration and smoothing algorithms for robust performance
- Automated the collection and logging of gaze and blink data for downstream analysis, supporting research and accessibility applications

TECHNICAL SKILLS

Languages: OCaml, Java, Python, JavaScript, TypeScript, HTML/CSS, SQL

Developer Tools: Git, SQL, Linux

Frameworks: React, Node.js, LangChain

Libraries: pandas, NumPy, Matplotlib, scikit-learn, OpenCV