David Zhan

301-323-5579 | dazhan@seas.upenn.edu | LinkedIn | Github

Education

University of Pennsylvania May 2026

Masters of Science in Computer Science, Bachelors of Science in Computer Science *GPA: 4.0/4.0*

- **Minors**: Mathematics, Data Science
- **Coursework:** Data Structures and Algorithms, Data Systems, Operating Systems, Machine Learning/AI, Natural Language Processing, Computer Vision
- **Involvements** Penn Aerial Robotics (Software Lead), Machine Learning Research @ Penn, Penn Club Soccer, Penn Club Badminton, Penn Flux

Professional Experience

Software Team Lead August 2024 – present

Penn Aerial Robotics — Python, ROS2, PX4, OpenCV, C++ *Philadelphia, PA*

- Spearheaded the development of a computer vision payload detection algorithm for UAVs utilizing binary thresholding
- Developed internal position representation from drone camera using RANSAC and ROS2 integration
- This high-accuracy system will compete in SAE Aero Design 2025.

Software Engineering Intern June – August 2024

Ventoscity — Flutter, Express, Typescript, SQLite *College Park, MD*

- Redesigned cross-platform mobile app using Flutter, achieving 20% faster load times and 30% smaller app size.
- Integrated AI-powered food scanning with 90% accuracy for portion sizes and fiber content analysis.
- Conducted extensive user testing with 100+ external participants implementing over 25 usability improvements, resulting in a 15% reduction in app crash rates.

Frontend Software Engineer March – May 2024

keep.id — React, node.js, Express *Remote*

- Complete redesign of main landing page, leading to a 60% reduction in user-reported issues
- Decreased average backend document retrieval response time by 23% through SQL query optimizations

Research Intern June – August 2023

National Research Foundation — Swift, SwiftUI, C++, Arduino *College Park, MD*

- Developed a full-stack mobile app for emerging gut-health start up at UMD; pivotal in securing over $1M in VC funding.

Mobile Developer Jan – Dec 2023

The Daily Pennsylvanian — React Native, Google Admob *Philadelphia, PA*

- Monetized DP+ mobile app for the first time in history, increasing total revenue of the Daily Pennsylvanian by 23%

Projects

Data Labeler — *React, Tailwind, FastAPI, Supabase, MEGA, AWS, Render* December 2024

- Dense captioning service to be used for training custom image models
- Implemented custom quality control, aggregation metrics; Amazon MechTurk for crowdsourcing data and crowd payment
- Captioned **400+** images, with a **210%** increase in words and **50%** in relevance compared to LLM generated captions

Blip — *Next.js, Tailwind, TypeScript, ConvexDB, Clerk, OpenAI, Cerebras* November 2024

- Short-form audio social media platform encouraging micro-learning during transition periods of the day
- Out of **500+** participants competing, winner of **PennApps XXV: Best Entertainment Hack**

Part-Of-Speech Tagger — *Python, numpy* September 2024

- Hidden Markov Model POS tagging implementation using **Viterbi, Beam Search and Greedy** inference methods
- Using English Penn Treebank dataset for training; achieved a **96.3%** accuracy on randomized test set

DavidDocs — *Next.js, TypeScript, Tailwind, liveblocks* June 2024

- **Real-time** collaboration environment designed to streamline **team productivity** and **document management**
- Implemented live commenting, integrated push notifications, environment sharing; increased user interaction by over **50%**.

Awards

PennApps XXV: Best Entertainment Hack 2024

AIME Qualifier 2019-2021

National Merit Scholar 2021

Skills

Languages: Python, Java, C++, Swift, Dart, JavaScript, Kotlin, Go

Frameworks: React, NodeJS, NextJS, Tailwind, TypeScript, ThreeJS, BootStrap, Flutter, FastAPI, Flask, Django

Tools: Supabase, Firebase, AWS, Convex, MongoDB, SQL, NoSQL, Docker

Machine Learning: pandas, numpy, scikit-learn, TensorFlow, HuggingFace, PyTorch, OpenCV