David Zhan

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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, Math 1410 Teaching Assistant

PROFESSIONAL EXPERIENCE

Software Engineering Intern — May – August 2025
Amazon — *Sunnyvale, CA*
- AGI team - LLM Optimization

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.

Research Intern — June – August 2023
National Science Foundation — Swift, SwiftUI, C++ — *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.
- Submitted Publication to **Nature Medicine** (Third Author)

Mobile Developer — Jan – Dec 2023
The Daily Pennsylvanian — React Native — *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

Publication in Nature Medicine (Under Review) — 2025
Smart Underwear: A Novel Wearable for Long-Term Monitoring Of Gut Microbial Gas Production Via Flatus
PennApps XXV: Best Entertainment Hack — 2024
AIME Qualifier — 2022
National Merit Scholar — 2021

SKILLS

Languages: Python, Java, C, Swift, Dart, JavaScript, Typescript, SQL
Frameworks: React, NodeJS, NextJS, Tailwind, ThreeJS, BootStrap, Flutter, FastAPI, Flask, Django
Tools: Docker, AWS, Convex, Neo4j
Machine Learning: TensorFlow, HuggingFace, PyTorch, OpenCV