# Vincent Zhao

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**Programming Languages:** Python, Java, JavaScript, TypeScript, HTML, CSS, Dart, R, SQL, C, C++, Swift
**Frameworks:** React, Vue, Tensorflow, NumPy, pandas, Express, Flutter, NextJS, React Native, Electron, Node JS, pytest, JUnit, Django
**Technologies:** Git, Firebase, OpenCV, Linux, Unix, GitHub, Google Cloud, REST API, Docker, MongoDB, Redis, PostgreSQL

## EDUCATION:

**Purdue University, West Lafayette** Graduation: May 2026
B.S. Computer Science Major; Math Minor GPA: 3.92
Relevant Courses: Discrete Math, Linear Algebra, Computer Architecture, Data Structures, Systems Programming, Software Engineering, Analysis of Algorithms, Intro to AI, Real Analysis, Machine Learning, Compilers, Intro to Robotics

## WORK EXPERIENCE

**Robinhood** May 2025 – Present
*Software Engineering Intern, Crypto/Web3 Team* *New York, NY*
- Built revenue-generating and customer-acquisition features in Robinhood's non-custodial Wallet app
- Enhanced onboarding, authentication, and security screens to support biometric-only wallet protection
- Optimized device attestation and challenge signing, improving load times and contributing to an 8% increase in user retention
- Implemented passkey-based encryption to secure cloud wallet backups and streamline account recovery
- Developed multi-wallet functionality, allowing users to create, manage, and switch between multiple wallets within the app

**Office of Indiana State Chemist** February 2024 – May 2026
*Software Developer* *West Lafayette, IN*
- Implemented forms used by over 300 inspection agents to collect data on pesticides, feeds, and other similar products.
- Developed Llama service to automate and streamline form completion for case processing, improving efficiency.
- Developed custom media viewer that handles audio, video, image, and documents with rotation and magnification features
- Wrote a file server for file uploads with job queue to normalize image types and transcribe audio using OpenAI whisper.

**Purdue AI for Musicians Research Group** Aug 2024 – Present
*Researcher* *West Lafayette, IN*
- Engineered automated evaluation pipelines for 2025 Automatic Music Transcription Challenge, processing 50+ contestant
- Automated model benchmarking using cron, producing and analyzing 500+MIDI test files daily to update leaderboard
- Developed MIDI-to-motion conversion system using URScript and Python, enabling UR5e robotic arm to play the cello
- Trained robot arm to use predetermined path with policy optimization to train robot playing in MuJoCo simulation

**NASA Genelab Effort: Space Biology** August 2023 – May 2024
*Researcher* *West Lafayette, IN*
- Analyzed microarray data for over 25k genes across 5 space flights for evidence of photorespiration in spaceflight with R.
- Visualized changes in expression of proteins coded for by genes in different plant pathways using the KEGG database
- Used AraCyc and SUBA-5 databases to map extreme gene expressions to photorespiration pathways and organelles

## PROJECTS

**RandezVous** | Github | (Flutter, Dart, ExpressJS, PostgreSQL, Redis)
- Developed a live location event driven based mobile app facilitating real-world meetups via encouraging spontaneity
- Built and deployed RESTful API using Express, PostgreSQL, and Supabase Auth; containerized with Docker
- Integrated Redis and WebSockets for secure, scalable real-time location tracking and state updates based on game state
- Engineered backend logic for notifications, group invitations, group management, and file uploads.

**Portal |** Website | (NextJS, PostgreSQL, NodeJS, Prisma, Shadcn, Zod)
- Helped create shuttle booking software for local airport shuttle businesses near Purdue (working with Lafayette Limo)
- Developed Samsara integrations for drivers and riders to view vehicle locations and track vehicle information
- Created update reminder email pipeline to send information to riders before shuttle date including live vehicle locations
- Built driver check-in flow, including cash handling, QR code validation for riders that are picked up at each stop.

**Compiler** (C, GNU Bison, x86 Assembly)
- Built a simple C compiler using Flex/Bison with support for math, flow control, functions, strings, and ternary operators
- Wrote custom syntax tree generation and x86 assembly output with support for basic pointers and boolean operations

**Shell** (C/C++, GNU Bison)
- Built a shell with support for piping between processes to and from files, environment variables, wildcards, and subshells