Colin Zhou

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EDUCATION

University of Illinois Urbana-Champaign — Urbana, IL
Masters in Computer Science — *Aug 2022 – Dec 2023*

Bellevue College — Bellevue, WA
Bachelor of Science in Computer Science — *Aug 2019 – May 2022*

EXPERIENCE

Full Stack Software Engineer — December 2024 – February 2025
Nuclearn — *Remote*

- Utilized FastAPI/SQLAlchemy to develop backend functionality for retrieving up to 25 most similar records in a dataset using 500+ embeddings generated through natural language techniques. Architected a back-end workflow with new SQLAlchemy datamodels to migrate 100+ YAML configurations across five config files into PostgreSQL, enabling dynamic updates via a React frontend, eliminating the need for Nuclearn's developers to restart the web backend during development if such configurations were changed.
- Optimized markdown processing for artifacts displayed across 10+ tool calls in AtomAssist, Nuclearn's proprietary AI chatbot. Implemented role-based access control with error handling for consumer, admin, and contributor roles, ensuring secure access to 10+ unique web app features on the frontend like Cap AI, AtomAssist, Capitalizer, and Cluster Analytics.

Full Stack Open Source Contributor — March 2024 – August 2024
PolicyEngine — *Remote*

- Worked with 3 contributors on PolicyEngine's web app project on GitHub (over 600 visits monthly). Used JavaScript to properly render 50+ blog images with fallbacks. Added URL route to show the API status, currently serving 100 requests per minute from around 50 authenticated users.
- Assisted in migrating the front end component library to the newest version of Ant Design. Streamlined 150 Jest unit tests by refactoring 5 metadata API calls to occur in the beginning of testing runs, accelerating test time by 27%.

Full Stack Software Engineer — Aug 2023 – Dec 2023
EcoLogical — *Remote*

- Implemented a 5 page dashboard using React and Ant Design for a web app to help small businesses track their carbon footprint. Optimized the responsiveness of the web app to fit desktop and mobile devices.
- Used 15 GraphQL queries generated on AWS to dynamically customize the dashboard for premium and basic plan users. Developed a 4 step sign up process for the user registration workflow using React and Ant Design.

Software Engineer Intern — July 2022 – Sept 2022
IOIntelligence — *Bellevue, WA*

- Constructed an 8 page dashboard using React and Chakra UI to coherently display mobile network data and latencies from 5 devices that was stored in Prometheus.io. Implemented a Node.js server using Express that queried a MySQL database containing user data, to be shown on the dashboard.

Front End Engineer Intern — June 2021 – Sept 2021
Molloy Moreno LLC — *Issaquah, WA*

- Shipped Project Elpis in 3 months, a serverless web app that helps at-risk high school students track their career progress. Currently in beta use at an NYC school with over 100 students.
- Utilized React and 20 GraphQL queries from Amazon backend to create features allowing teachers to add new students, download student progress forms, and create / assign learning pathways.

TECHNICAL SKILLS

Languages: HTML/CSS, JavaScript(ES6), TypeScript, SQL, Python
Frameworks: React.js, Node.js, Next.js, Jest, Tailwind CSS, FastAPI, React Query, Flask
Developer Tools: Git, Linux, AWS, Docker, Redis, MySQL, PostgreSQL Agile, Generative AI, Google Cloud, VS Code, Jira, AdobeXD, Figma, NPM, REST API, GraphQL, MongoDB, Scrum, Alembic, JWT