

David Dickinson

Creator, Software Engineer

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PROFILE

I'm a full-stack software engineer with extensive experience in both JavaScript and Ruby, and I'm also proficient in TypeScript, Python, and Go.

SKILLS

Back End

Node.js, Express, Ruby, Go, Python, PostgreSQL, MongoDB, REST APIs

Front End

JavaScript, TypeScript, React/Redux, Handlebars, HTML/CSS

Cloud

Digital Ocean, AWS (EC2, RDS, IAM, CloudFormation, S3), Heroku, Fly.io

Other

Git, Docker, Linux, Bash, WebSockets, Yjs, Jest, OOP, Nginx, Postman

PROFESSIONAL EXPERIENCE

Creator, Software Engineer

09/2023 – present

Umbra 📧

Umbra (umbra-collab.net) is an open-source, browser-based code editor enabling real-time collaboration and code execution.

- Engineered Umbra using Node.js, Express.js, TypeScript, Docker, PostgreSQL, Yjs, AWS (EC2, IAM, RDS), and Cloudflare (Workers, Durable Objects, R2).
- Automated deployment with GitHub Actions, replacing a manual process with a streamlined pipeline for environment setup, Docker image building, and AWS Lightsail deployment.
- Enabled real-time collaboration by integrating CodeMirror with Yjs.
- Developed a RESTful API for managing code snippets and user interactions.
- Integrated the Piston code execution engine for secure code execution.
- Authored JavaScript test suites to ensure code reliability and maintainability.
- Led the creation of an in-depth case study, analyzing Umbra's problem domain, system design, and engineering decisions.
- Collaborated with a remote team of four engineers across three time zones, employing agile methodologies.

Software Engineer

2021 – 2023

Self-employed

Developed various personal and open-source applications including:

- *ReqBin* - a real-time tool for receiving and monitoring webhooks (DigitalOcean Droplet, Express, Material UI, MongoDB, Nginx, Node.js, PM2, PostgreSQL, React)
- *Capstone Condenser*: A Python tool that summarizes and categorizes presentations using YouTube Data API, OpenAI GPT API, NLTK, Matplotlib, PyLDAvis, and Streamlit for an interactive interface.

EDUCATION

Bachelor of Science: Electrical Engineering and Computer Science

Massachusetts Institute of Technology

2003

Cambridge, MA