

Michael Johnson

Software Engineer

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PROFILE

I'm a full stack engineer who is passionate about programming, people, and teams. I find it incredibly rewarding to be a part of what great teams are able to accomplish. I have multiple years of experience in Typescript, Go, Javascript and Ruby.

PROFESSIONAL EXPERIENCE

Co-Creator, Software Engineer -- Umbra 2023 – present

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

- Led the design and implementation of the Umbra backend as a scalable, service-oriented architecture, including five discrete services utilizing various hosting solutions to allow for ease of horizontal scalability (**Node.js, Express.js, AWS EC2, Cloudflare Workers, Durable Objects, R2**)
- Engineered real-time, multiplayer code-editing functionality by leveraging CRDT data structures to allow for conflict resolution and consistent state across users (**Yjs, WebSockets, CRDT**)
- Implemented persistence of user 'code snippets' allowing users to save their work to an individualized 'Code Library' by designing an appropriate schema and data layer, and backing Umbra with a relational database running on its own server. (**Postgres, SQL, AWS RDS, AWS IAM**)
- Created a solution for customer identity and access management that allowed for user account authentication/authorization functionality (**AWS Cognito**)
- Automated the deployment process saving many hours of manual-deployment overhead and reducing a ~20 step process to a single push command (**GitHub Actions, Docker**)
- Designed and implemented a RESTful API for Umbra, supporting user authentication, code snippet management, and real-time code execution.
- Authored a comprehensive 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 and practices such as daily standups and mob/pair programming.

Software Engineer -- Self-employed 2021 – 2024

Developed open-source applications including:

- **ReqBucket** - Tool for collecting and debugging webhooks ([DO Droplet](#), [Nginx](#), [MongoDB](#), [Node.js](#), [Express](#), [React](#)).
- **vChat** - Open-source internet chatroom toolkit ([Go](#), [Golang](#), [React](#))

Sales Manager (Certified Arborist) -- Davey Tree Expert Co. 2020 – 2021

- Managed ~30 employees and engaged in daily meetings with crews and crew leaders to delegate jobs.
- Set company sales record for first-year sales arborist and won Davey Sales Award.

Team Leader -- Davey Tree Expert Co. 2017 – 2020

- Led crews of arborists in planning and executing logistically complex and potentially hazardous tree-work jobs.
- Interfaced with clients to communicate regarding expectations and to ensure job-satisfaction.

SKILLS

Backend (Node.js, Express, Ruby, Go, PostgreSQL, MongoDB, REST APIs),

Frontend (JavaScript, TypeScript, React/Redux, Handlebars, HTML/CSS),

Cloud (Digital Ocean, AWS EC2, IAM, Lightsail, Cognito, RDS, Cloudflare Workers, Durable Objects, R2),

Other (Docker, Linux, Bash, HTTP, Git, GitHub, WebSockets, Jest, OOP, Nginx)

EDUCATION

Launch School 2021 – 2023

Multi-year, mastery-based software engineering tradeschool.

Georgia State University -- Master of Arts (ABT), Philosophy 2010 – 2012

University of Colorado, Boulder -- Graduate Coursework, Linguistics 2011