# 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 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.

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## PROFESSIONAL EXPERIENCE

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

Umbra (umbra-collab.net 🔗 ) is a browser-based code editor with 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 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 19 step process to a single push command. (GitHub Actions, Docker)
- Designed and implemented service interfaces and a RESTful API for Umbra, supporting user authentication, code snippet management, and real-time code execution.
- Authored a comprehensive case study 🔗 (umbra-collab.net), analyzing Umbra's problem domain, system design, technical challenges and choices, 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 31 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.

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## SKILLS

| Backend | Frontend | Cloud | Other |
|---|---|---|---|
| Node.js, Express, Ruby, Go, PostgreSQL, MongoDB, REST APIs | JavaScript, TypeScript, React/Redux, Handlebars, HTML/CSS | VPS, AWS EC2, IAM, RDS, Cloudflare Workers, Durable Objects, R2 | Docker, Linux, Bash, HTTP, Git, GitHub, WebSockets, Jest, Nginx |

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## 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