# Mykolas Viningas

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## PROFILE

I am a full-stack software engineer with multiple years of experience designing, building, and solving in the Ruby, JavaScript, and Go ecosystems. Most recently, I co-created Symphony, an open-source framework that provides real-time collaboration functionality and ready-to-scale infrastructure to web applications.

## PROFESSIONAL EXPERIENCE

**Creator, Software Engineer,** 2023 – present
*Symphony (symphony-framework.github.io)*
An open-source real-time collaboration framework

- Researched and decided on the components to be provisioned, including real-time infrastructure and state convergence
- Implemented preservation of shared application state (document) by checkpointing and storing the documents in binary form to object storage (AWS S3)
- Designed the schema for a PostgreSQL database (AWS RDS) and implemented persistence of server metadata
- Simplified the monitoring and debugging of the system by building a dashboard interface that provides metric data about connections and documents (React, TypeScript, Tailwind)
- Wrote a RESTful API (Node.js/Express) for delivering server metadata to the dashboard client, including live metrics (SSE)
- Created an API and built an NPM package for a client library (JavaScript) that connects to the WebSocket server
- Abstracted away the backend management by containerizing (Docker, AWS ECR) and moving the architecture from AWS EC2 to AWS ECS deployed in Fargate mode
- Separated concerns by decoupling the backend into individual services for Dashboard and WebSocket clients
- Provided a single point of entry to different services and traffic routing to individual instances of the WebSocket server by configuring an application load balancer (AWS ALB)
- Engineered a custom load-testing solution (AWS EC2, Docker) to extract the performance metrics of the WebSocket server and identify the bottlenecks under as close to real-life conditions as possible
- Increased the number of concurrently connected clients handled by the WebSocket service from 240 to 10,000 (40x) by horizontally scaling the WebSocket server using publisher/subscriber model (AWS ElastiCache for Redis) and allowing server-to-server querying for application state (AWS DynamoDB)
- Contributed to building a CLI application that uses the AWS CDK and SDK libraries to automate infrastructure deployment
- Authored Symphony's case study: symphony-framework.github.io
- Collaborated as part of a remote team of 4 engineers across 2 timezones using Agile workflow

**Software Engineer,** *Self-employed* 2019 – 2022
Some of the projects and technologies used during this time:

- Terminal - a real-time application for receiving and debugging webhooks (Next.js/React, TypeScript, ChakraUI, Node.js, Express, PostgreSQL, MongoDB, WebSockets)
- Progress Pal - a database-backed productivity application for managing tasks and goals (Ruby, Sinatra, PostgreSQL, JavaScript, jQuery, HTML, CSS)
- Contact Helper - a contact manager application that lets you save and sort contacts by different categories with Model-View-Controller structure on the front-end (Node.js, Express, JavaScript, Handlebars, HTML, CSS)

## SKILLS

**Back end**
Node.js, Express, Ruby, Sinatra, Go, PostgreSQL, MongoDB, RESTful APIs

**Front end**
JavaScript, TypeScript, jQuery, React/Redux, Next.js, HTML, CSS

**Tooling**
Git/GitHub, Docker, Linux, Bash, Nginx, Pm2

**Cloud**
AWS, DigitalOcean Droplets, Heroku

## EDUCATION

***Launch School*** 2019 – 2022
A mastery-based study of Software Engineering fundamentals

**Royal Academy of Music, University of London,** 2013 – 2017
*Bachelor's degree, Jazz/Jazz studies*