Stephen Watzman

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Experience

Creator and Software Engineer, Arbiter (arbiter-framework.com) Aug 2023 – present

- Created an open-source, serverless realtime conferencing framework that automates deployment to AWS that enabled developers to integrate room-based video conferencing into their applications in minutes
- Developed a CLI that automates the provisioning of AWS cloud infrastructure (ECS Clusters, WebSocket Gateway, HTTP API Gateway, IAM roles, etc.), reducing a 50+ step workflow to a single command
- Designed and built a Selective Forwarding Unit for video conferencing that facilitates conference calling with 15+ users in a single room
- Containerized server components and designed a scaling mechanism that reduces complexity of server deployment by 10+ steps and enables API-based scaling
- Wrote a RESTful API to manage backend interactions between the frontend application and AWS infrastructure that provisions new ECS container instances to meet user demand
- Served as lead author for a comprehensive case-study (arbiter-framework.com/case-study) providing an in-depth analysis of Arbiter's problem domain, system design, and engineering decisions
- Implemented a pair-programing framework for a remote team of 3 engineers to foster mentorship and collaboration, resulting in increased team-wide ownership of code and clarity on technical decisions

Software Engineer, Self-Employed Jan 2020 – Jun 2022

Wrote open-source software with Node.js, Express, & React, among other technologies. Selected projects:

- Dreamcatcher - A tool for collecting and debugging webhooks (DO, Nginx, MongoDB, Node.js, Express, React)
- UnitBuilder - A site for teachers to work collaboratively on unit and lesson plans with subject-tagging (Express, Node.js, Typescript)
- PerformancePromotions - Website for a local client to manage their database of promotional products, and allow clients to preview products using their logo (Firebase, ruby, Sinatra, erubis, Javascript)

Computer Science Teacher, Royal Oak High School Aug 2019 – Jun 2023

- Developed a cutting-edge AP Computer Science course with David Malan from Harvard's CS50 that allows automated feedback on problem sets
- Created the CS Department and Pioneered AP Computer Science and Computer Science Discovery courses using C and Python-based curricula
- Mentored students to achieve a 95% AP pass rate, which was 30% above the Michigan state average
- Redesigned Science and Technology to include engineering projects and principles, resulting in 24% increased mastery of Physics content relative to prior years

Science Teacher, Oak Park and River Forest High School Aug 2015 – Jun 2019

- Coached a VEX-Robotics team to achieve a top 10 world placement at the world-championship event that included 30,000 students from 50 countries
- Implemented a system of key-value pairing for assessment to inform data-driven instruction for student assessment

Skills

Languages and Fromeworks
TypeScript, Express, React, Jest, ruby, Python, SQL, Tailwind CSS

Cloud
AWS CDK, SDK, EC2, ECS, Lambda, API Gateway, S3, CloudFront, DynamoDB

Other Technologies
Node.js, PostgreSQL, MongoDB, Redis, Docker, Nginx

Education

M.A. - Science and Technology Ed, Wayne State University 2011 – 2012

B.S. - Biochemistry, Michigan State University 2006 – 2010