Kushaal Malde *Software Engineer*

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PROFILE

I am a generalist problem solver with years of experience working in the JavaScript ecosystem. I have a background in mathematics and I have extensive experience with AWS and Go. I am a co-creator of Otter, an open-source serverless framework that enables peer-to-peer video communication within web applications.

RELEVANT EXPERIENCE

Co-Creator, Software Engineer, *Otter* Feb 2023 – present | Remote

Otter is an open-source, cloud native framework that enables peer-to-peer video communication within web applications by leveraging WebRTC, AWS and CoTURN technologies. https://otter-framework.dev

- Engineered an auto-scaling serverless infrastructure on AWS to enable WebRTC functionality within web applications (HTTP/WebSocket API Gateways, Lambda functions, Network Load Balancers, ECS with Fargate, and DynamoDB)
- Built a developer friendly CLI npm package to automate the provisioning and teardown of AWS cloud infrastructure, saving developers over 100 steps (AWS CLI, IAM roles, oclif)
- Developed a React frontend application for private 1-on-1 meetings hosted by Otter (CloudFront with S3 Bucket) with low latency audio/video communication, instant messaging, and file sharing
- Containerized and deployed CoTURN in ECS with Fargate to enable highly available, scalable STUN/TURN servers
- Achieved 100% private and secure communication without a central server (WebRTC, CoTURN)
- Secured access to HTTP and WebSocket API Gateways by using an API key and JSON Web Tokens
- Optimized Otter for low latency by reducing the number of reads to DynamoDB from over 20 to 2
- Decoupled services based on traffic patterns and resolved race and concurrency challenges associated with event driven architecture (Lambdas, API Gateway)
- Designed an API for developers to self service integrating the Otter ecosystem into web apps with a single API call
- Authored a 9000 word technical case study discussing design decisions and engineering challenges

Software Engineer, *Self-employed* Dec 2021 – Dec 2022 | Remote

- Developed open-source web applications. Selected projects include:
  - ReAck: a real-time React application for inspecting webhooks (Socket.io, Nginx, PostgreSQL, DO Droplet, PM2, Node)
  - Collab Board: Kanban board for task management (MongoDB, Express, Node, React, Redux)
  - Diminishing Wist Scorekeeper: a React web app for multiplayer card game (Node, React, MaterialUI)

Data Analyst, *Stanford University* Nov 2018 – Apr 2022 | Stanford, CA

- Automated workflows by building modular tools to iterate and improve processes. Selected tools include:
  - OCR Scanline tool to generate unique alphanumeric sequences based on record metadata automatically (Python)
  - Spreadsheet pre and post processing tool to standardize, cleanse and transform records automatically (Pandas)

SKILLS

Languages & Frameworks
Node, JavaScript, TypeScript, React/Redux, Go, Express, Python, MongoDB, PostgreSQL, RESTful APIs, HTML, CSS, jQuery, Jest, Mocha

AWS Cloud
DynamoDB, Lambda, EC2, ECS, HTTP/WebSocket API Gateways, S3, Cloudfront, Cloudformation, IAM, Fargate, Cloudwatch

Other Technologies
Docker, Git/Github, Nginx, Postman, DigitalOcean Droplets, Bash, Linux, Websockets

EDUCATION

BA Computer Science, BA Pure Mathematics, BA Statistics, May 2018
University of California, Berkeley