

Chris Shen *Software Developer*

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PROFILE

A full-stack software developer with a background in product management.
Experienced with JavaScript/TypeScript, Ruby, Go, PostgreSQL, React, Tailwind and AWS services.

EXPERIENCE

Co-Creator, Software Developer, Otter (*otter-framework.dev*) [🔗](#) Jan 2023 – present

Created Otter, an open-source cloud native framework for peer-to-peer video communication within web applications.

- Designed a serverless architecture on AWS that prioritizes low maintenance and scalability.
- Implemented a Signaling server with 3 Lambdas written in TypeScript for peer connectivity and messaging; configured the WebSocket API Gateway for long-lived connection, DynamoDB for persisting connection state.
- Optimized Signaling Lambda's performance by reconstructing the message structure and caching the connection state, resulting in an 80% decrease in latency (from 1000+ms to 200+ms).
- Containerized CoTURN, an open-source implementation for NAT traversal on Fargate; configured ECS Task Definitions, Network Load Balancer, and auto-scaling group for horizontal scaling.
- Developed and published an npm package using TypeScript and oclif that streamlines the deployment and teardown of 6 CloudFormation stacks and 90+ AWS resources with a single command.
- Architected a scalable API server with one Lambda per endpoint for integrating Otter into existing applications; used HTTP API Gateway to handle requests, and DynamoDB to persist session state.
- Secured API Gateways with API Key authentication & JSON Web Tokens using Lambda authorizers.
- Crafted a React web application that uses WebSocket and WebRTC API to enable real-time video communication, messaging and file-sharing between peers; polished with Tailwind CSS; hosted using CloudFront with S3.
- Authored a comprehensive case study [🔗](#) on Otter's design decisions and engineering challenges.

Software Developer, Open-source projects Oct 2021 – Dec 2022

- ReAck: a real-time webhook debugging tool (React, Express, WebSocket, PostgreSQL, MongoDB)
- NoSpoil: a household inventory manager (Ruby, Sinatra, PostgreSQL, Bootstrap)
- Later: a minimal task management application (Ruby, Sinatra, HTML/CSS)

Product Manager, Baidu Inc., Beijing Apr 2015 – Oct 2018

Collaborated with a team of 6 developers in an Agile environment with an average sprint length of four weeks. Delivered two internal web applications aiming for boosting sales team's performance and efficiency. Key features include:

- A dashboard providing customer and market insight for SME sales
- Personalized, detailed customer data report for KA sales upon request
- A product recommendation service based on customer interactive metrics

SKILLS

Languages & Frameworks

JavaScript, TypeScript, Ruby, Go, SQL, HTML/CSS, React/Redux, Tailwind, Bootstrap, Express, Sinatra, Jest, oclif

Cloud

AWS SDK, CloudFormation, Lambda, EC2, ECS, Fargate, API Gateways, CloudFront, S3, DynamoDB, Digital Ocean Droplets

Other Technologies

Node.js, Git/Github, AWS SAM, Docker, PostgreSQL, MongoDB, WebSocket, WebRTC + API, RESTful APIs, Nginx

EDUCATION

Master of Business Administration, Renmin University of China

BA Medical Sciences, Peking University