Curriculum Vitae

Summary

Lead Full Stack Software Engineer with 7+ years of experience designing and building scalable, reliable, and high-performance software. Expertise in leading and architecting full-stack teams, creating highly available backend microservices, and implementing modern frontend solutions. Proficient, Go, TypeScript, and Python, with a strong focus on observability, CI/CD pipelines, and cloud-native architectures. Skilled in both backend and frontend development, I thrive in data-rich, creative, and innovative environments.

Skills and Software

- **Back End:**
  - `Go` (Goroutines, zap, templ, gorm, typescriptify, xc)
  - `TypeScript` (Node.js, NestJS, TypeORM, npm)
  - `Python` (Pandas, Scikit, TensorFlow, Jupyter, Pytest)
  - `Java` & `Scala` (Spring Boot, Kafka, Gradle)
- **Front End:**
  - `TypeScript` & `JavaScript` (`React`, `Redux`, `Next.js`, ChakraUI, Storybook)
  - `HTML5`, `CSS3`, Responsive Design
- **Architecture and Cloud:**
  - `AWS` (Lambda, SQS, ECS, EKS, Step Functions, CloudWatch)
  - `Kubernetes`, `Docker`, Microservices
  - Infrastructure as Code: `Terraform`, `CDK`
  - `CI/CD`: GitHub Workflows, Jenkins, Test-Driven Development, Launch Darkly
  - `RESTful` Web Services & `WebSockets`
- **Database and Data Engineering:**
  - `SQL` (PostgreSQL, MySQL, SQL Server)
  - `NoSQL` (MongoDB, DynamoDB, Neo4j)

Experience

Senior Full Stack Software Engineer | Aviva Zero | London | 01/2024 - present

Driving transformative climate solutions through cutting-edge technology and robust system management.

- **Scalable Impact and High Availability**: Instrumental in building and maintaining a platform that has sold over a million policies and supports tens of thousands of daily users. Ensured consistent 24/7 uptime and reliability by implementing rigorous monitoring and performance optimization practices.
- **Backend Performance Optimization**: Enhanced backend performance using `Go`, leading to significant improvements in system responsiveness and efficiency, thereby supporting a high volume of concurrent users and transactions.
- **Advanced UI/UX Development**: Developed high-quality, accessible `React` frontends using `Figma` designs, `Chakra UI` components, and `Storybook`, resulting in an engaging and seamless user experience.
- **Infrastructure and Observability**: Spearheaded improvements in alerting and observability, implementing advanced monitoring solutions and automated alerting systems to ensure proactive issue detection and resolution.
- **Advisory Role and Roadmap Structuring**: Played a key advisory role in guiding the transition from a start-up to a more enterprise-scale system. Provided strategic input on structuring and producing roadmaps for product squads, facilitating a smooth transition to mature, scalable systems and processes.

Lead Software Engineer (Tech Lead) | Flock Cover | London | 02/2023 - 01/2024

Making the world quantifiably safer by developing a next-generation insurance platform with a strong emphasis on modern cloud infrastructure and serverless technologies.

- **Developing Insurance Platform**: Led full-stack development of Flock's insurance platform, deploying features across backend (`NodeJS`, `TypeScript`) and frontend (`React`, `Next.js`). Focused on scalability and performance.
- **Scalable Microservices Architecture**: Designed and deployed microservices using `AWS Lambda`, `ECS`, and `EventBridge`. Focused on creating observable and maintainable services that scale with user demand, ensuring 24x7 availability.

- **Comprehensive Infrastructure as Code (IaC)**: Championed the use of `Terraform` and `CDK` for managing and provisioning cloud infrastructure. Created and maintained `Terraform` scripts to manage AWS resources, including EC2 instances, RDS databases, and Lambda functions, ensuring a repeatable and scalable infrastructure setup.
- **Fast and Reliable Deployment**: Utilized CI/CD pipelines to streamline the deployment process, incorporating `GitHub Actions` for automated builds, tests, and deployments. Ensured that code changes could be rapidly and reliably deployed to production.
- **Team Leadership and Best Practices**: Fostered a high-performance engineering culture through mentorship and adherence to best practices in code quality and infrastructure management. Promoted a collaborative environment where innovation and continuous improvement were prioritized.

Senior Consultant Full Stack Engineer | Infinity Works part of Accenture | 10/2021 - 02/2023

Led the development of scalable solutions for specialty insurance using modern technology stacks and best practices in infrastructure management.

- **Team Collaboration and Leadership**: Acted as a Tech Lead, guiding the team through challenging engineering problems, organizing knowledge-sharing sessions, and promoting a strong engineering culture.
- **Automation in Specialty Insurance**: Led the development of automation tools for underwriting data extraction and distribution. Utilized `TypeScript`, `Node.js`, and `Postgres` to build scalable, maintainable solutions integrated with AWS.
- **Complex Integrations and Automations**: Developed and maintained complex integrations and automations using serverless and event-driven architectures. Employed tools like `AWS Step Functions` and `EventBridge` for orchestrating workflows and managing state across various services.
- **Serverless Microservices**: Architected and deployed serverless microservices using AWS technologies such as `Lambda`, `API Gateway`, and `DynamoDB`. Designed these services to be highly available, scalable, and observable, integrating with monitoring tools like `CloudWatch` and `Datadog` for real-time performance insights.
- **Client Collaboration and Roadmap Refinement**: Worked closely with clients to understand their needs and refine delivery roadmaps. Provided technical expertise in designing scalable solutions and ensuring successful project outcomes.

Software Engineer | UK Home Office | 09/2020 - 10/2021

- **Developing High-Impact Government Applications**: Built web applications using `ReactJS` and `AngularJS`, with an emphasis on `TDD` and `BDD`. Collaborated with designers to implement responsive and user-friendly UIs.
- **API Development and Integration**: Developed REST APIs in `Node.js` to interface with various data sources and services, including `MongoDB`. Built and maintained backend systems that processed large amounts of data efficiently.
- **CI/CD and Containerization**: Managed application infrastructure using `Docker` and `Kubernetes`. Implemented continuous integration pipelines with `Drone` to automate testing and deployment.
- **Collaborating with Data Scientists**: Worked closely with data scientists to design and implement ETL processes for extracting, transforming, and loading data into graph databases. Utilized `Neo4j` for pattern matching and analysis. This work was crucial for deploying machine learning models aimed at detecting fraud and other criminal activities.

IT Developer | Mott MacDonald | 09/2018 - 09/2020

- **ERP Integration and Automation**: Developed integration programs in `Java` to connect legacy systems with cloud-based ERPs. Applied `SOLID principles`, `Design Patterns`, and `TDD` to deliver maintainable and reliable code.
- **Data-Driven Solutions**: Designed JavaScript-based electronic forms and workflows to automate business processes. Worked with large datasets using `PL/SQL` and developed backend solutions that aligned with business needs.

Achievements & Projects

Hack Hate 2020: Hate Detector

🏆 Winner: Best use of AI / ML (awarded by AWS)
🏆 Winner: Best use of location (awarded by ESRI)

Led a project to detect and visualize hate speech networks on social media. Processed and classified 18.5M+ tweets using `Python`, `TensorFlow` `Scikit`, and GIS mapping tools. Built a data pipeline for large-scale text processing and sentiment analysis.

Presentation | **Code**

Education

Birkbeck, University of London | MSc Computer Science | Distinction | 09/2017 - 09/2019

Developed a deep understanding of core computer science principles, with a particular emphasis on algorithms, data structures, machine learning, and natural language processing (NLP). The program honed my ability to build scalable, efficient software solutions, particularly for my interest area of big data and AI-driven applications.

Thesis: Character-level Convolutional Neural Networks for Hate Speech Detection with Intelligent Adversaries

Trained a CNN-based text classifier to automatically categorize large volumes of textual data. The project involved preprocessing raw text data, including tokenization and vectorization, and training multiple CNN models for multi-class classification. The model was designed to recognize subtle differences in language patterns, enabling high accuracy in distinguishing between various categories of text. This thesis combined my knowledge of NLP, deep learning, and data processing, culminating in a successful demonstration of text classification at scale.

Royal Holloway, University of London | BA History | 2:1 | 09/2009 - 08/2013

Developed strong analytical skills, creative problem-solving, and effective communication, all of which have proven valuable as non-technical skills in my transition to software development.