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Martin Carolan

13+ Years in Software Engineering | Engineering Manager & Senior Backend Expertise | Strong DevOps background (Linux, AWS, CDK, Terraform)

Seeking a role as an Engineering Manager or Senior Engineer in modern tech stacks (Golang, Rust). Demonstrates strong leadership (team-building, mentoring) and DevOps expertise (AWS, Terraform, CI/CD) from multiple enterprise-scale engagements. Aims to leverage extensive functional programming knowledge while driving technical excellence and making teams a delight to work in.

type systems — Jul 2017 - Present

Director & Consultant - Type Systems, Manchester
Software development, team leadership and Scala training contracts:

EQUAL EXPERTS — Jan 2024 - Jan 2025

- Served as a Tech Lead for a data engineering project at SiriusXM, leveraging TypeScript, Scala, and AWS CDK. Contributed to the design and implementation of an ETL pipeline that ingested and normalised data from dozens of sources into a data lake.
- Advocated the use of Architecture Decision Records (ADRs), fostering collaborative decision-making among engineers and ensuring a clear, documented record of trade-offs for future review.
- Translated data privacy requirements into practical solutions, implementing tooling that allowed engineers to work with sensitive data while maintaining strict auditing and access controls.

🌎 — Dec 2022 - Dec 2023

- After 12 years in the industry, I took a break to travel through 20 countries across 4 continents with my wife, honing my communication, planning, and problem-solving skills while navigating various logistical challenges.

EQUAL EXPERTS — Jul 2022 - Dec 2022

- Contributed to a greenfield authentication and identity system for SiriusXM, written in Scala with extensive use of functional programming libraries (Cats, Http4s, Doobie, Smithy4s).
- Collaborated on establishing continuous integration (CI), continuous deployment (CD), DevOps, and Infrastructure as Code (IaC) practices, deploying on AWS with CDK (TypeScript bindings) for efficient and reliable operations.

itv — Jan 2019 - Apr 2022

- Contributed to the development of a monitoring solution for ITV's content lifecycle, covering business approval, delivery of media assets, transcoding, and archival stages.
- Helped build a suite of Scala microservices that aggregated data from internal and external systems, surfacing exceptional / notable events in a React (TypeScript) web UI for operations.
- Held regular pairing sessions with the operations team to observe their daily workflows, gather feedback on tooling usage, and implement targeted improvements that enhanced their efficiency.

underscore — Nov 2017 - Dec 2018

- Mentored a newly formed Scala team at YOOX Net-a-Porter, guiding them through Underscore's "Scala with Cats" book, providing code reviews, and conducting workshops on their new Scala project.
- Developed a flexible reference/credit checking system for Goodlord (a lettings platform), automating manual decision trees and integrating external data sources. This project was completed three weeks ahead of schedule and increased the referencing team's productivity by 40%.
- Rebuilt a Spark job using Scala for the advertising agency Blis, introducing a CI/CD pipeline and implementing data provenance tracking. Collaborated with a team from IBM to ingest this provenance data into Hyperledger Fabric, for a clear record of data sources used by the model.

HM Revenue & Customs — Jul 2017 - Nov 2017

- Led a new infrastructure project deployed on AWS, using Terraform for Infrastructure-as-Code. Prototyped integrations with Hardware Security Modules (HSMs) to generate robust, verifiable digital signatures.

Keywords: Functional Programming, Scala, Cats, Http4s, Postgresql, RabbitMQ, AWS, BigQuery, Spark, Leadership, Training, Terraform, Puppet, TypeScript, Jenkins

itv — Jun 2014 - Jul 2017

Senior Software Engineer - ITV, London

- Led the Content Delivery team at ITV, overseeing end-to-end technical direction, stakeholder alignment, and resource planning, while actively building systems.
- Developed event-driven Scala microservices with RabbitMQ (asynchronous messaging) and REST (HTTP), persisting state in PostgreSQL.
- Deployed and supported production services across AWS and on-premise data centers, integrating COTS systems for media archival and processing.
- Promoted functional programming principles, pair programming, and the TypeLevel stack to improve code quality and team collaboration.
- Hired and line-managed three developers, conducting regular 1:1s, setting performance goals, and fostering mentorship programs to accelerate growth.

Keywords: Functional Programming, Scala, Cats, Http4s, Postgresql, RabbitMQ, AWS, Leadership, Management, Recruitment, Jenkins

Mind Candy — Dec 2012 - Jun 2014

Software Engineer then Data Engineer - Mind Candy, London

- Contributed to a suite of AWS-hosted services, primarily in Scala and Java, managed via Terraform. These services provided insights and integrations across all Mind Candy games, including:
  - An event system capturing and interpreting millions of daily events.
  - An A/B testing platform to optimise game features and user experience.
  - An identity system enabling a unified experience across multiple products, platforms, and authentication methods.
  - A notification system for sending targeted, large-scale messages to users with specific profiles.
- Worked on payment and subscription solutions, deployed on AWS and provisioned with Terraform. Responsibilities included:
  - Implementing reliable integrations with various payment gateways, subscription, and voucher providers.
  - Designing a flexible architecture to enable rapid experimentation with offers and rewards.
  - Ensuring seamless integration with Mind Candy's games for user entitlements, and developing reporting systems to support data-driven decisions.

Keywords: Functional Programming, Scala, Scalaz, Java, Postgresql, Big Data, RedShift, AWS, SQS, Jenkins

Morgan Stanley — Jul 2010 - Dec 2012

Associate Software Engineer - Morgan Stanley, London

- Contributed to the development of a bidding and analytics system with both backend (Java/C++) and frontend (C#/WPF, HTML5/Ext JS4) components to support trading desk operations.
- Completed the intensive 15-week Morgan Stanley Technology Analyst Programme, gaining hands-on experience in Unix, C++, Java, C#, relational databases, web development, Perl, Python, as well as presentation and project management skills.
- Enhanced scripts and models written in C++, Perl, Java, and C#, ensuring trading desks had the necessary tools to operate effectively.

Keywords: Java, C++, C#, WPF, Javascript, Python

Morgan Stanley — Jun 2008 - Aug 2008

Intern Software Engineer - Morgan Stanley, London

- Interned in Morgan Stanley's Securitised Products Group, rewriting a legacy client-facing investor report portal in ASP.NET/C#.
- Developed a Java-based batch job to load house price index and credit data into a Sybase database, improving data accessibility and reliability.

Keywords: C#, .NET Framework, Java, Sybase

Education

2010 — BSc Computer Science
FIRST CLASS WITH HONOURS
University of Durham
First year awards: BCS award for outstanding academic achivement, Morgan Stanley prize
Second year awards: academic scholarship
Final year awards: Scott Logic first prize for academic achievement

Conference Talks

2018 — [Droidspeak]
A SCALA DSL FOR CONSTRUCTING BINARY DECISION TREES IN A FRIENDLY AND VERIFIABLE MANNER.
flatMap Oslo

2016 — [flatMappy bird: functional flappy bird]
AN OVERVIEW OF FUNCTIONAL REACTIVE PROGRAMMING, IN PARTICULAR COROUTINES.
Scala eXchange

Core Skills & Tools

- Languages: Scala, Java, C#, TypeScript, Javascript, Golang (learning), Rust (learning), Python
- Frameworks & Libraries: Cats, Http4s, React, .NET
- Cloud & DevOps: AWS (CDK, ECS, Lambda), Terraform, Jenkins, Github Actions, Docker
- Databases & Messaging: PostgreSQL, MySQL, RabbitMQ, Kinesis
- Leadership & Management: Team Building, Mentoring, Agile, Scrum, Stakeholder Communication

Values: λ Functional Programming, 👥 Pair Programming, 🏃 Running, 🏔 Hiking, 🐶 Golden Retrievers