Michael Perdue

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Professional Statement

Software Engineer specialising in Java backend development within fintech, building distributed, event-driven and cloud-native systems. Experienced in developing and maintaining Spring Boot services, designing ISO20022 message flows using Apache Camel and supporting high-availability architectures powered by RabbitMQ and Oracle DB. Contributed to cloud platform migration initiatives and delivered deployment automation adopted across multiple teams. Seeking a software engineer role within fintech, banking or technology-driven organisations.

Technical Skills

Languages: Java, Python, SQL
Frameworks: Spring Boot, Apache Camel, Flask, Angular, JavaFX
Cloud & DevOps: AWS, Pivotal Cloud Foundry (PCF), Docker, Git, Bitbucket
Messaging & Databases: RabbitMQ, MySQL, Oracle DB, InfluxDB
Testing: JUnit, Cucumber, JMeter
Tools: Grafana, Insomnia, Postman
Other: REST APIs, Event-Driven Architecture, ISO20022, Google Protocol Buffers

Professional Experience

Software Engineer I

Mastercard – London, UK (Hybrid)
September 2024 – Present

- Contributed to the migration of enterprise Spring Boot services from AWS to Pivotal Cloud Foundry (PCF) across multiple engineering teams.
- Designed and implemented reusable deployment automation scripts and migration documentation adopted across multiple teams, reducing manual engineering effort by 1,500+ minutes within six months.
- Designed and maintained ISO20022 message processing flows using Apache Camel and Spring Boot.
- Maintained and enhanced event-driven integrations using RabbitMQ and Oracle DB, resolving defects.
- Worked within existing CI/CD pipelines and containerised environments using Docker, Git, Bitbucket, AWS and PCF to build, test and deploy services.
- Implemented automated testing across unit (JUnit), integration (Cucumber), and performance (JMeter)
- Acted as a subject matter expert for transaction flows within the product, serving as a key point of contact for technical guidance, complex defect resolution and cross-team knowledge sharing.

Software Engineer (University Industrial Placement)

BSI (British Standards Institution) – Remote
January 2024 – May 2024

- Led the architectural redesign of a legacy translation system within a large-scale Angular (TypeScript) application, standardising translation logic across 75 components and 30+ services.
- Introduced a hierarchical taxonomy-based lookup model and centralised translation service, improving maintainability and enforcing consistent translation patterns.
- Eliminated 128 duplicate key-value pairs (12.8% reduction) and restructured translation documents for scalability and maintainability.
- Designed and implemented dynamic locale generation, successfully internationalising the platform and validating delivery through Spanish localisation.

Technical Project Highlights

Portfolio Website

https://michael-perdue.github.io/

Developed a personal portfolio website using Jekyll and GitHub Pages showcasing university and personal projects.

- Documented project architectures, technical decisions, and implementation details.
- Included code snippets, explanations, and demonstrations for each project.

Distributed Smart Environment System (University group project)

Technologies: C++, Java, Python (Flask), MySQL, InfluxDB, REST APIs, Micro:Bits

- Designed and developed a distributed system for configuring and monitoring smart building environments across multiple locations.
- Implemented embedded C++ firmware for Micro:Bits enabling mesh network communication and serial data transmission to backend services.
- Developed a Java backend service responsible for processing serial packets using the Observer pattern, validating messages, and integrating with REST APIs.
- Built a Python Flask REST API with user authentication, role-based access control, and database interaction.
- Designed database schemas and managed both MySQL (relational data) and InfluxDB (time-series environmental data).
- Implemented Google Protocol Buffers in early iterations to standardise message serialization across services.
- Integrated Grafana dashboards for visualisation of temperature, light, and environmental metrics.

Additional Technical Projects

- Implemented a distributed task processing system in Java using RMI and a Chord-based architecture, supporting REST task submission, load balancing, and asynchronous execution with fault recovery.
- Created a 3D modelling tool using JavaFX, allowing creation and manipulation of cuboids and spheres, with translation, rotation, duplication, material configuration, zoom, pan, and dynamic lighting controls.
- Implemented a custom memory allocator in C using only sbrk, reinforcing understanding of heap management and low-level memory allocation.
- Developed a Python-based Discord bot featuring automated moderation, persistent banned word storage, and bulk message management. Deployed to a VPS with a lightweight Docker container for 24/7 availability.
- Built networking tools in Python using raw sockets, including ICMP Ping, UDP and ICMP Traceroute, a basic web server, and a proxy server, demonstrating understanding of networking protocols and packet-level communication.
- Developed and published a Google Chrome extension using JavaScript, HTML, and CSS that redirects users to random predefined websites from a JSON dataset.

Education

MSci Software Engineering with Industrial Experience - First-Class Honours

Lancaster University
October 2020 – July 2024

Relevant focus areas: Distributed systems, embedded systems, networking, algorithms and data structures, full-stack development.

A-levels

Caroline Chisholm School
September 2018 – July 2020

Computing (A*) | Mathematics (A) | Cambridge Technical Introductory Diploma in IT (Distinction*)

Selected for Royal Society programming initiative developing VR educational software in C# and Unity.