Keane Fernandes

Birmingham, United Kingdom
E-mail LinkedIn GitHub Portfolio

SUMMARY

Engineer with a strong technical background in software development and a proven track record of delivering high performance systems in the automotive industry. Skilled in utilising various programming languages and technologies to design and implement software solutions that meet business requirements.

TECHNICAL SKILLS

Languages: Python, Java, C, SQL, Bash
Frameworks: Cucumber, Scrum
Technologies: Amazon Web Services, Jira, Git, Docker
Certifications: Professional Scrum Master, ISO 26262 Functional Safety

EXPERIENCE

Alten UK **Oct 2021 – current**
Software Engineer *Birmingham, UK*

- Lead software delivery engineer and scrum master in the Powertrain department at **Jaguar Land Rover**, working in an Agile team (Scrum) delivering software for low voltage battery management systems used in 6+ vehicle lines
- Delivered software features such as cybersecurity, software over the air and diagnostics by working across the software development life cycle, from gathering requirements to development, validation and sign-off
- Contributed to the successful closure of over 150 software tickets by analysing finite state machine diagrams, reviewing **C** code snippets, working with multi-disciplinary hardware and software teams, and using problem solving techniques such as 8D to maintain quality of production software
- Automated execution of functional tests on the software functions of the battery using Python, resulting in accelerated validation of battery functionality and improvement in the continuous integration pipeline
- Developed a preprocessing tool using **Python** and **MATLAB** that converted several gigabytes of battery usage data into data structures optimised for large scale battery simulations, resulting in improvements of simulation times of 27%
- Spearheaded software quality activities such as compliance of application software to industry coding standards (**MISRA C**) and risk analysis of software delivery plans to ensure robust delivery of software to support vehicle builds

csi GmbH **Oct 2017 – Oct 2020**
Modelling and Simulation Engineer *Stuttgart, Germany*

- Architected and developed battery simulation infrastructure ground-up in **MATLAB** and presented this work at the 2019 MathWorks National Automotive Conference 2019 in Munich, Germany – official link to presentation
- Managed software requirements and test cases of an infrared sensor module for a San Francisco based autonomous vehicle manufacturer and contributed to the successful delivery of 30 sensor modules in support of prototype builds
- Maintained and linked software requirements to vehicle features and attributes across different ECUs within the powertrain domain for a Chinese supercar manufacturer

Mercedes-Benz Research and Development **Jul 2015 – Sep 2015**
Modeling and Simulation Intern *Bangalore, India*

- Simulated the deformation in material defect regions of pressed sheet metal parts using non-linear mathematical models developed in **MATLAB**, contributing to the optimisation of production line processes

General Motors **Jun 2014 – Sep 2014**
Supply Chain Optimisation Intern *Pune, India*

- Performed statistical analysis (warehouse space savings, manufacturing line headcount reductions, supplier footprints) to assess the economic and logistical implications of phasing out production of one of the car lines
- Implemented Dijkstra's all shortest paths algorithm and priority queue in a **Java** program to find the shortest route for the transport of parts from the the warehouse to the production line

EDUCATION

University of Bristol **Sep 2020 – Sep 2021**
MSc Computer Science (Distinction) *Bristol, United Kingdom*

- Courses – Programming in C, Object-Oriented Programming in Java, Cloud Computing, Databases, Computer Architecture
- Dissertation - Cyber Attack Prevention in Vehicles using Machine Learning Enabled Anomaly Detection (Grade: 75%)

University of Bristol **Sep 2013 – Jun 2017**
MEng Mechanical Engineering *Bristol, United Kingdom*

- Awarded a £1000 scholarship for being a top performing student in Year 1
- Courses - Engineering Mathematics, Discrete Mathematics, Computer Based Modelling, Control Systems, Electronics
- Dissertation - Design and Assembly of a Treadmill to Investigate Human Balance (Networking, Algorithm Development)

PROJECTS

Cyberattack Prevention Using Supervised Machine Learning | Python, Bash, Wireshark **Sep 2021**

- Architected and developed a fully unit tested, dual-layered network monitoring application in **Python** that uses **supervised machine learning** and **anomaly detection** to predict if the network is undergoing a denial of service attack
- Applied **software development life cycle** (SDLC) principles such as requirement definition, version control, performance optimisation and testing (unit tests, integration tests and system level tests)
- Generated feature rich datasets that were made open source and used by other members of the University for training and implementation of various machine learning models

Distractability | Docker, Bash **May 2021**

- Took on the role of scrum master and planned development through sprints, divided work to group members via user stories and created scum artefacts and deliverables
- Applied **software development life cycle** (SDLC) principles such as requirement definition, version control, performance optimisation and testing (unit tests, integration tests and system level tests)
- Automated the build, test and deployment processes using **Docker compose** and **Bash** scripts and containerised the application and its dependencies using Dockerfiles

SQL Clone | Java **Mar 2021**

- Successfully implemented a Java-based clone of an SQL server and client, including design and development of a database management system and query processing algorithms
- Utilised advanced Java programming techniques such as socket programming to ensure efficient and reliable communication between the server and client

Simple Text Adventure Game | Java **Mar 2021**

- Developed a terminal-based text adventure game server that supports JSON and XML file import for game environment setup
- Implemented support for multiple players within the same game session and natural language processing to facilitate interactions between in-game objects and players

Turtle Assembler | C **Dec 2020**

- Developed a C-based clone of the Logo programming language that implements efficient and accurate parsing and interpretation of Logo code resulting in seamless execution of complex Logo scripts
- Utilised advanced C programming techniques such as lexical analysis, and developed custom testing harnesses that allow for comprehensive white-box and black-box testing of the interpreter and parser

Polymorphic Hashing | C **Nov 2020**

- Developed a C-based hash table abstract data type, including implementation of the hash function, collision handling via linear probing to ensure efficient and reliable data storage and retrieval
- Utilised advanced C programming techniques such as memory management and pointer manipulation to optimise the performance and memory usage of the hash table and API design, providing an intuitive interface for the end-user

LANGUAGES

English – proficient (C2) German – intermediate (B2) Hindi – intermediate (B2)