




JAKE INGRAM-WRIGHT

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PROFILE

I am a versatile Software Engineer, who is recognised as a motivated, hard-working, and knowledgeable member of the team, striving to achieve through a passion for problem solving and innovative thinking. I have over 8 years experience within the industry, proving myself to be: adaptable to fast changing requirements, able to quickly learn unfamiliar technologies in order to implement robust and dependable solutions, and deliver high quality, easily maintainable products both internally and to external customers. I always seek opportunities to further my own skillset and take a proactive approach to self-development both inside and outside of the workplace.

SKILLS

Languages

C, C++, C#, Dart, Java, JavaScript, Kotlin.

Databases

PostgreSQL, MySQL, and SQLite..

Version Control

Use of Git and Subversion.

Platforms

Android, Web, Embedded, Linux, Windows, Bare Metal.

Frameworks

Jetpack Compose, Flutter, .NET WinForms, Arduino, CubeMX, ESP-IDF.

DevOps

CI/CD on an internal Gitlab server utilising Docker to build software packages for deployment.

Test

Test driven development using GoogleTest, GoogleMock, and in-house test harnesses.

EDUCATION

2013 - 2017

The Open University

BSc (Hons) Mathematics and Physics

2011 - 2013

Bournville College

A Level Qualifications in Business, Mathematics and Physics.

EXPERIENCE

PROFESSIONAL

Software Engineer at Thorcom Systems Ltd, Worcester

October 2020 - Present

Worked as part of a three-person team to design, develop, and deploy bespoke software, firmware, and hardware communication solutions to customers including Home Office, British Armed Forces, Irish Ambulance, and EDF Energy.

- Custom Android OS, developing system services in C++ and Java, controlling volume and audio routing, CANbus interfaces, ethernet interfaces, and GPIO.
- Modern Android application development using Kotlin, Jetpack Compose, and the MVVM design pattern. Integrating multi-bearer support over UDP sockets for reliable communication in areas of unknown coverage.
- Legacy Android application maintenance in Java, providing ongoing updates and support to a fleet of over 300 mission-critical ambulances in daily use.
- MySQL and PostgreSQL schema, triggers, and query implementation; following the principle of least privilege and first normal form.
- Windows application development using .NET and WinForms.
- Full Gitlab pipeline setup for multiple projects, including: standing-up local Windows and Linux build servers, Gitlab runner integration, Dockerfile creation for .NET and Android build systems, and YAML build script creation.
- STM32 firmware written in C, utilising the CubeMX framework, working with: CANbus, I2C, I2S, PWM, RS485, UART, and USB composite devices.
- Schematics design and PCB layout, bringing full product design and development in-house, a skill set previously outsourced to expensive external contractors.
- Identifying minimum viable product requirements, mapping the development into well defined and realistic sprints.

Software Engineer at Phixos UK Ltd, Worcester

September 2015 – October 2020

Contributed on a multitude of projects, leading teams to scope, develop, and test safety and mission critical software systems, as well as web and Windows applications for customers including Rolls Royce, Leonardo, and Airbus.

- Code reviews and unit tests to ensure work completed correctly implements the requirements and is written to a high standard.
- Lead teams by being the point of contact for multiple clients, undertaking site visits for requirements capture, authoring estimates including detailed breakdowns of project timelines and costs, constructing an overall workload, and distributing the workload effectively to all members.
- Created, tested, and delivered integrated algorithms and architecture, including a set of C++ libraries that are able to be implemented within not only the tasked project but future systems, as well as documentation of the surrounding information regarding the conceptualisation and use of the delivered code.

PERSONAL

Puft UK Air Suspension Management System

An ongoing passion project resulting in the design and implementation of a pressure-sensor based aftermarket air suspension management system, allowing full dynamic and corner-independent control of a vehicle's ride height, alleviating the need to purchase expensive alternatives. Ongoing maintenance and updates are performed using new knowledge obtained through both personal and professional development.

- Design and manufacture of PCBs to create: a system control unit, a 3.5" touchscreen, and a 2.4GHz RF 'keyfob', utilising the Espressif chipset family and all supporting electronics.
- Embedded C++ firmware development, allowing for increased code readability and maintainability; as well as easy integration of the GoogleTest and GoogleMock frameworks for unit testing and test driven development.
- Integration of I2C, SPI, UART, BT, and RF, including the implementation of a dynamic length CRC checked packet protocol for error-free communication between devices.
- Android/iOS application built using Google's Flutter framework, including the handling of Bluetooth state and communications, scanning exclusively for Puft devices through the use of GATT characteristics and advertisement data, and separation of business logic from user interface implementation via the MVVM software design pattern.
- REST API implemented in PHP, connecting to a MySQL database. Authenticating genuine Puft devices and generating time constrained tokens for firmware binary downloads encrypted utilising 256 bit AES CBC with randomly generated 128 bit IV's.