Alex McLellan BSc (Hons) Dunelm MIET

Software engineer with more than 2 decades of programming experience and a passion for renewables. My contributions are installed on billions of devices (~20 billion) and used in domestic, industrial, defence, marine, extra-planetary and research environments.

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SKILLS

PROGRAMMING
Daily:
I C/C++(03 - 20) • Python
Experienced:
• C# • Cli/C++ • HTML • Javascript • LATEX • SQL •XML • JSON
Familiar:
• Haskell

OPERATING SYSTEMS
Windows
Linux (Ubuntu + Buildroot)

INTERESTS

- Cycling - Tandem, mountain and road.
- Skiing - I spent a season in France skiing.
- Building - Restoring my grade II listed home.
- Beekeeping - I'm a member of my local bee-keepers association and own hives in the area.
- Languages - I'm learning Italian.
- Community - I host and maintain the websites for local community groups.

COMMUNITY

MALVERN TOWN COUNCIL |
Councillor
June 2013 – May 2015 | Malvern, Worcestershire, UK

- Debating.
- Writing motions.
- Staff appraisals.
- Chairing meetings.
- Leading and contributing to community projects.

LINKS

Github:// **AlexMcLellan**
LinkedIn:// **Alexander McLellan**
Stack Overflow:// **alex-mclellan**
Website:// **alexmclellan.net**

INDRA RENEWABLE TECHNOLOGY | Senior Software Engineer
April 2019 – Current | Malvern, Worcestershire, UK

Experience

- Defining software requirements and specifications.
- Developing, testing and releasing software.
- Creating release notes.
- Estimating and reviewing packages of work.
- Leading code reviews.
- Leading improvements to development process.
- Leading small teams to deliver software releases.
- Ensuring compliance with relevant industry standards and open source licenses.
- Championing software industry best practice.
- Mentoring and leading software engineers.
- Liaising with internal and external stake-holders and engineers.
- Triaging issues from customer support.
- Producing reports and project status reports.
- Software architectural diagrams; high-level block / Lower level UML.
- Fire marshal.
- Commercial license negotiation.

Skills

- Linux (Buildroot & Ubuntu).
- Bash, Python, C, C++20, Unit testing and CMake.
- Kibana, Github, Confluence and Jira.
- Version control.
- Software modelling and documentation.
- Cyber security and encryption.
- IoT communication.
- Embedded communication buses.
- Updating kernel modules and patching the Linux kernel.

Training

- Fire marshal training.
- Dangers of high-voltage training.

Achievements

- Project management.
- Requirements definition.
- Solved issues around new government legislated regulations.
- Read, implemented and/or reviewed the implementation of
  - OCPP 1.6
  - The Electric Vehicles (Smart Charge Points) Regulations: G99, G99, G100 & G100 issue 2
  - Energy networks association standards
  - iso 15118-2 and iso 15118-20

ZX LIDAR | Contract Senior Software Engineer
August 2020 – January 2021 | Malvern, Worcestershire, UK

EDUCATION

DURHAM UNIVERSITY
BSc (Hons) in Computer Science
Grad. 2007 | St.Aidans College

Undergraduate Coursework
Software Engineering
• Project Management • Requirements Engineering • HCI • Software Design • Software Life-cycles • Documentation
Applied Computing
• Compiler Design • 3D Graphics • Databases • Concurrent Systems
Theoretical
• Foundations of Computer Science • Data Structures • Theory of Computation • Specification and Verification • Distributed Systems • Parallel Systems • Concurrency and Concurrent Systems
Artificial Intelligence
• Automated Reasoning • Advanced Information systems • Multi-agent systems • Advanced Topics in AI
Dissertation Topic
• Learning Strategies in Games (Research into Reinforcement Learning)

NEWCASTLE-UNDER-LYME COLLEGE
Grad. May 2004 | Newcastle-Under-Lyme, UK
National Diploma in ICT

ST JOSEPH'S COLLEGE
Grad. 2002 | Stoke-On-Trent, UK
GCSE including Maths and English

Nationality
British
Driving Licence
Full UK - No points.
MOD Clearance
July 2008 - September 2013.
Security Clearance (SC)

ZEPHIR LIDAR | Senior Software Engineer
May 2012 – April 2019 | Malvern, Worcestershire, UK

Responsibilities
- Defining requirements for, developing, testing and releasing software.
    - Firmware - Multi-threaded C++ and C with experience of 256-AES Encryption, Boost, UDP, FTP, many more.
    - Hardware interfaces - DSP comms and other devices over RS-232 and RS-485.
    - GUI - Winforms C# using CLI/C++ and QT using Python.
    - Scripts - Python, Bash and Batch.
- Supporting Mathematicians with Python and C++ in the R&D department.
- Supporting and liaising with customers.
- Covering when other senior staff are away.
- Interviewing software engineering candidates.

Experience
- Numerical software
    - Writing best practice numerical (LMA fitting) code using SIMD and IEEE 754 floating point.
    - Fixing numerical stability issues in legacy code.
- Project lead – requirements capture, design, implementation, testing, delivery, documentation and presentations.

Achievements
- I wrote a C++ framework which now underpins new firmware and desktop applications.
- Implemented new suite of software to automatically calibrate and test hardware and allow the end-user to analyse the output to determine potential issues.
- Introduced git to the company, by using it with git-svn; now the development team has switched exclusively to git.
- Implemented next generation algorithm to determine wind speed and led an investigation into its accuracy vs other methods.
- Led the merge of 2 sets of firmware into a single firmware application.
- Restyled the main Winforms application from a Photoshop render and improved the GUI code.
- Contributed patches for opensource libraries which contained broken features, such as **cURL**.

ENVITIA | Software Engineer
July 2008 – September 2011 | Horsham, West Sussex, UK
Responsibilities
- Writing and debugging Software.
    - Server side - Multi-threaded CLI/C++, C++ and C, and PL/SQL on Oracle databases.
    - GUI - MFC and web-development.
- Supporting and liaising with customers.
- Deputy fire marshal.

TEST HOUSE | Non-functional consultant
September 2007 – July 2008 | London, UK
- Non-functional testing of large enterprise e-commerce websites.
- Training other consultants with the C language used for load testing.
- Gained ISTQB-BCS qualification.