Pete Woods

Lead Engineer

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Summary

I'm a software engineer with 14 years experience of delivering solid, well-written projects in many languages and frameworks across different operating systems. I design and develop testable code, work with stakeholders, and lead projects.

Skills

Languages	Java 11, C++14, BASH, SQL, GoLang; some JavaScript, Ruby, Python, Ansible
Technology	Docker Swarm, Spring Boot (MVC, Data, Security, Cache), AWS (CloudFormation, ECS, EC2, RDS, etc), HAproxy, Nginx, Redis, MariaDB, ELK, Jenkins, ReactJS
Tools	Git & GitHub, Maven, CMake, Eclipse, IntelliJ, Docker, VisualVM, Valgrind, vim, gdb
Techniques	Team Leadership, Agile, SCRUM, TDD, BDD, CI, DevOps, Responsive Design

Experience

Surevine Ltd — Lancaster, UK (Remote)

2018–present **Lead Engineer**, *Surevine Services*, (Java-based distributed systems).

- **Projects** Following the 12-factor application model (simple config, no state, disposability, containerised packaging, etc.), I built secure, scaleable collaboration solutions for security-conscious organisations.
- **Architect** I led the design, implementation and deployment of a complex security-focused cross-domain system – integrating with high assurance guards and conforming to other strict security requirements.
- **Continuous learning** With my enjoyment of teaching and learning from others, I initiated a weekly session (called Techcellence) where I and my co-workers could present on any topic that was tangentially related to work. I found this an excellent way of both sharing my knowledge, and learning in areas I might not automatically focus on.
- **Technology** Identifying software packaging and release as a particular pain-point within the company, I lead the adoption of containerisation and service orchestration, enabling customer-driven/owned installs, where previously lengthy on-site visits were required.
- **Open source** To the degree that is possible within this working environment, I continued to contribute to open source projects (Java EWS API, Homebrew).
- **Quality** I expanded test coverage in all projects I worked on. I introduced tests into inherited projects that were difficult to test, wrote and used harnesses for integration testing, and wrote a re-usable fake implementation of some parts of a Microsoft Exchange server.

KDAB GmbH — Lancaster, UK (Remote)

2017–2018 **Senior Engineer**, *KDAB UK*, (Qt/C++ on Android/iOS and Java web services).

- **Web services** I took a legacy internal business-critical Java EE application and overhauled it using Java 8 and Spring Boot, added automated unit and integration testing (JUnit and DBunit), a modern responsive front-end, while maintaining various stakeholder's needs.
- **Mobile app development** Developed rich, fluid cross platform (Android and iOS) mobile applications for different clients, sticking to budgets and always delivering high customer satisfaction.

Canonical Ltd. — Lancaster, UK (Remote)

2012–2017 **Senior Engineer**, *Ubuntu OS*, (Qt/C++ and GoLang on core Ubuntu OS).

- **Award** I received a *Spotlight Award* in 2016 where I was recognised by the company's founder as a great role model.
- **GoLang web services** I worked on Canonical's Snappy packaging / IOT / embedded platform for around 1.5 years adding additional REST APIs to support purchasing of packages.
- **Ubuntu Mobile** I developed the lock-screen infographics from backend to presentation. I developed the voice control system, writing scripts to train CMU's Sphinx against the VoxForge speech corpus, creating language models for use in a simple command and control library. I worked extensively on the network management indicator to improve its quality.
- **Testing enabler** I developed several C++ libraries (libqtdbustest, libqtdbusmock, unity-scope-harness, gmenuharness) to enable testing of projects that previously weren't testable at all, or only in a limited way. Here are examples of highly readable tests using these libraries: indicator-network, indicator-sound.
- **Security** Unity8 is the first Linux shell that supports untrusted applications from an app store. Therefore it requires hardened code (e.g. decoding untrusted data externally). I applied these practises in the localisation of the lock screen and in the notifications backend.

BAE Systems: Applied Intelligence — Cheltenham, UK

2010–2012 **Principal Engineer**, *Electronic Systems Group*, (High-speed C++).

- **Team leadership / management** I managed budgets and contracts for the business area's projects, ensuring timely and on-budget delivery. I led weekly SCRUMs and daily stand-ups.
- **DevOps** I led the Agile development of an automated system for continuous deployment of a large and complex software stack based on RHEL using Ruby and Puppet. I created new testing tools to enable TDD of Puppet modules.
- **High performance C++** I implemented high performance data structures using STL and Boost. I carried out performance tuning using a mixture of Valgrind and VTune. I optimised the product's test suite, reducing a complete run to under 5 minutes, down from over an hour.
- **Project infrastructure** I managed the project infrastructure, both the physical assembly and software provisioning. I used Foreman as the front end to a Puppet-based deployment system. I deployed a Gerrit/Git/Jenkins based system for my team to facilitate robust testing and review practises.

2008–2010 **Senior Engineer**, *Systems Integration Business Unit*, (Java data fusion).

- **Team leadership** After becoming the tech lead of a Java-based data fusion and visualisation platform, I instigated the use of Agile methods (SCRUM and TDD) to restore stability to a rapidly growing code-base (~1 million LOC) and team (25 engineers). This code-base is now integrated into BAE Systems' AML Compliance offering.
- **High performance Java** Being a data fusion platform, scalability and performance was of paramount importance. Working from the initial graph implementation I was able to achieve memory savings of around 80%, aided by tools like YourKit and VisualVM.

2006–2008 **Consultant**, *National Security Business Unit*, (Oracle PL/SQL programming).

- **Data migration** I led a small team developing and deploying a data migration solution using Java and Oracle PL/SQL.
- **Oracle tuning** I spent time performance profiling the database design and making improvements using Oracle's query plan analyser. With the right selection of indexes and SQL query design I was able to reduce migration time to minutes from hours.

Education

2004–2005 **MSc in Data Analysis, Networks & Non-linear Dynamics**, *Distinction*, University of York.

2000–2004 **BSc in Mathematics & Computer Science**, *1st*, University of York.