ALEX SPURLING

SOFTWARE DEVELOPER

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Profile

I am a full-stack developer who likes to build software with a focus on quality, security and customer needs. I have over 15 years' experience working in agile teams developing Java web applications including leading several projects in my role at Digivault. I'm a citizen of the EU and UK.

Experience

Digivault   2019-Current

Digivault is a secure digital asset custodian and was the first cryptocurrency custodian to obtain an FCA registration in the UK.

> **Technologies**
>
> *bitcoin, ethereum, java, python, html, javascript, typescript, react, redux, rx-js, svelte, playwright, postgres, docker, kubernetes, gitlab*

Digivault Custody

I was responsible for implementing and deploying their cold-custody technology which allowed us to sign blockchain transactions offline using private keys held in a hardware-security-module.

- Helped to design a data flow process that could execute relevant instructions entirely offline.
- Designed and implemented a data serialisation format based on QR codes.
- Designed and implemented a dynamic approval rule engine (Digisafe Policy Engine).

Digivault Authenticator

Lead an external team of developers and QA engineers to develop a mobile authentication app.

- Helped to design the requirements for the Digivault Authenticator app.
- Reviewed the iOS and Android code to ensure it met the project's requirements and quality standards.
- Held regular meetings with the out-sourced development team removing blockers to ensure on-time and under-budget delivery.

Off-exchange Custody

Lead a team of three to deliver Exchange Connect which allows users of a 3rd-party exchange to hold their assets securely with Digivault.

- Designed and implemented a method for making API calls using shared-secret API keys stored offline.
- Designed and implemented a model to allow traders to lock, trade and settle assets daily.

New Web Portal

Lead a team of two on the implementation of a new design for the customer-facing web portal.

- Worked closely with the web-design team to create a new design for the web portal taking into consideration client needs and security.
- Helped to re-write the old React front-end using Typescript and Svelte.
- Delegated tasks to another developer while maintaining a high code quality standard and end-to-end test coverage with Playwright.

Leadership roles

As the second-most senior developer on the team, I occasionally took responsibility for managing other development teams and reporting status to management.

- Interviewed developer candidates and reviewed their code submissions.
- Performed initial research and presented on the Polkadot blockchain.
- Became a "champion" for testing ensuring high quality and reliable tests.
- Lead two separate projects in teams of 2-3 developers.
- Presented weekly status updates to management.

Rubric - Localisation Automation Tools   2017-2019

Rubric is a localisation company translating English software to 40+ languages.

> Technologies
>
> *java, html, javascript, python, git*

Process automation

I wrote Java plugins for the WorldServer localisation platform which parsed JSON, YAML, XML and other file types in order to extract their translatable strings. I also wrote internal python scripts to automate the pre- and post-processing of clients' English source and translated files.

- Created a generic parsing architecture for chaining different file parsers together.
- Created a diffing algorithm for key-value data comparing 4 different file versions simultaneously.
- Created an automatic delivery system which pushed deliveries directly into clients' git repository.

QMetric Group Limited - Server Side Developer   **2012-2017**

QMetric is the technology company behind the new insurance website Policy Expert which combines insurance sales with price comparison and brokerage into a single service.

> Technologies
>
> *java, javascript, groovy, kotlin, dropwizard, mysql, mongodb, AWS, CQRS, event-sourcing, agile*

Server Side Development

I was responsible for the development of their new generic insurance platform which allowed us to launch several new insurance products including motor and home insurance. I worked on the java/groovy backend which used a CQRS and event-sourcing architecture backed by MySQL and MongoDB. I also worked on the javscript front end using AngularJS and Backbone.

- Worked closely with business analysts to develop new features delivered and deployed in weekly iterations.
- Integrated the system to several third-party services including the Insurecom Car insurance platform.
- Created an operations web application for defining arbitrary insurance products using AngularJS.
- Created a Dropwizard microservice to provide data access to a legacy application.
- Created a chat room bot to trigger deployments to development environments.

Playfish (Electronic Arts) - Server Side Developer   **2010-2012**

Playfish was the UK's leading developer of social games. I was responsible for developing the server side Java web application technology for games handling up to 10M unique players per day.

> Technologies
>
> *java, jersey, guice, ruby, svn, git, maven, mysql, xml, AWS, TDD, agile*

Game Development

As a server developer, I worked on two major games, Restaurant City and The Sims Social, at their peak reaching 5M and 10M daily players respectively. The Playfish architecture is heavily service-oriented and hosted entirely by AWS. I was responsible for developing high quality features in collaboration with game designers, PMs, QA and other development teams.

- Built monitoring page for The Sims Social to visualise the real time performance of the game.
- Improved performance by analysing thread dumps, heap dumps and garbage collection statistics.
- Automated the Maven build process by writing a command line script in Ruby saving hundreds of hours of developer time.
- Modularised the game code for Restaurant City by converting the build process from ant to Maven.

Game Content Management System

The Playfish Content Management System is a tool designed to speed-up iteration cycles and eliminate errors for all their games' content. Built on top of the hierarchical database Jackrabbit, it supports locks, transactions and branching for game content data.

- Helped to design a clean and consistent REST API for clients to interact with the server.
- Implemented REST services on the server side using Jersey.

Evangelism / Training

- Presented an introduction to git
- Presented an overview of OSGi
- Presented an overview of Datomic
- Ran training sessions on git for SVN users over 5 weeks.

Markit - Associate Developer   **2007-2010**

Markit (now S&P Global)'s primary business is the calculation of prices for derivative financial instruments by the aggregation of prices provided by banks. I was part of the development team of their CDS product and starting in 2008, the Clearing service.

Technologies

java, jee, spring, ruby, svn, maven, oracle, xml

Clearing Project

- Lead developer from the start of Markit's high profile Clearing service to provide banks with reference prices for CDS and credit index instruments.
- Developed a web application to receive and process XML price feeds based on Java, JEE, Spring and Oracle.
- Developed a Java algorithm to calculate CDS prices and trades from contributed bid/ask prices using a simulated auction process.
- Mentored and guided other team members in their general development practices.
- Aided the project lead with planning, estimating and architecture and design decisions.

During the project, I suggested and implemented many improvements to the development process such as:

- Moved build process from Ant to Maven.
- Created RPM distribution mechanism for managing deployments.
- Reduced human error and downtime by automating the database upgrade process with a perl script.
- Implemented continuous deployment to the development server using Maven, Jenkins and some custom deployment scripts.
- Created a suite of regression tests with TestNG which would run automatically after each successful deployment.

Other Projects

- Created a batch task to calculate composite loan credit index prices (aggregation of contributed prices).
- Re-architected the caching mechanism to give clients access to historical reports.
- Implemented a historical record for client mappings (i.e. the data a client is subscribed to) to allow reports to be generated for past dates.

Education   University of Cardiff   **2003-2006**
                   Computer Science BSc

- Graduated with 1st class honors (79% overall mark).
- Won the LogicaCMG prize for best final year project.
- Won the British Computer Society prize for excellent first year performance.

Projects   Some projects that I've worked on in my spare time are publicly viewable:

- Raytraced 2D to 3D projection of Earth images taken by the NASA DSCOVR satellite: https://github.com/alexspurling/earthflow
- Android Restaurant Search app: https://github.com/alexspurling/mimi
- Smart sensor to fix my broken washing machine: https://www.instructables.com/Washing-Machine-Notification-Sensor/
- A smart radio as a gift for my mother's 70th birthday: https://francoise.fm
- More can be found at my Github profile: https://github.com/alexspurling/.