

David Wood

SOFTWARE ENGINEER

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Summary

Currently a Integrations Engineer at Codeplay Software; regular Rust compiler contributor; and a Software Engineering Undergraduate at the University of Glasgow.

Work Experience

Codeplay Software

INTEGRATIONS ENGINEER

Edinburgh, Scotland

September 2017 - present

I'm currently an Integrations Engineer at Codeplay. This involves the creation and configuration of tooling for automation and improvement of Codeplay's build infrastructure. It requires working closely with the development and infrastructure teams. I employ a combination of software engineering knowledge with operations knowledge to find solutions that increase developer productivity while minimizing downtime and maintenance requirements.

Codeplay Software

INTERN BUILD ENGINEER

Edinburgh, Scotland

May 2017 - September 2017

During the summer of 2017, I interned as a Build Engineer in Codeplay's Integrations team. I worked on improvements to the tooling surrounding Codeplay's build infrastructure. Over the course of the four months, I implemented vast changes to the infrastructure that reduced re-provisioning costs and improved the flexibility and extensibility of the provisioning tooling. I also made various improvements to other internal tools used by the development teams.

West Dunbartonshire Leisure

SOFTWARE CONSULTANT

Glasgow, Scotland

December 2016 - February 2017

I was asked to create an informational landing page for West Dunbartonshire Leisures 10K race series - a continuation of Polaroid Eyewear's series. This involved working closely with the team at WDL to refine the needs of the website and then to build a functional, easy-to-use and easy-to-update website. Performance was an important consideration, and time was spent to ensure the website was fast and would require little maintenance. It launched to great user feedback in February of 2017.

Polaroid Eyewear

INTERN SOFTWARE DEVELOPER

Glasgow, Scotland

April 2015 - July 2015

During the summer of 2015, I built and designed a fully-featured web-based Inventory Manager system and a suite of desktop applications for tracking the performance of the Warehouse.

Both projects required independence and coordination with other departments and employees. These well-designed applications released on schedule with brilliant feedback from users.

Polaroid Eyewear

SOFTWARE CONSULTANT

Glasgow, Scotland

June 2014 - May 2016

I was contracted to complete an incomplete shop floor information system - MIDAS. An ASP.NET system (in C#) which is the backbone of Polaroid Eyewear's manufacturing. I worked within the structure of the IT team, this involved interacting with the final users to define new features and enhancements. MIDAS went live in September 2014 with excellent user feedback.

In 2015/2016, I worked on creating an updated modern website for Polaroid Eyewear's 10K Race Series - this e-commerce website allowed runners to enter any of the four races in the Series - in March 2016 the website launched to great feedback and we saw an increase in runners and in charitable donations while saving money on payment processing costs.

Projects

Compiler Contributor

RUST PROJECT

October 2017 - present

Since October 2017, I've been contributing regularly to Rust's compiler. As a member of the NLL working group, I've worked on various diagnostic and performance improvements as well as some work on soundness and completeness. I've also been involved in implementation of some RFCs - such as RFC 2008 and the edition changes for eRFC 2497. In addition to NLL and RFC contributions, I've made various smaller contributions including changes to the compiletest tool and compiler documentation deployment. In August 2018, I was granted merge privileges to the compiler for significant regular contributions - this responsibility includes being part of the rotation to be assigned incoming PRs for review.

Autokrator

Glasgow, Scotland

UNIVERSITY TEAM PROJECT

October 2017 - March 2018

As part of my third year at the University of Glasgow, four other students and I were tasked with creating a event-sourced financial platform for Avaloq. Our completed application - Autokrator - consists of many components: a central event bus; a microservice framework, the superclient; a backend gateway and a UI. It was required that our application contain a central event bus, three microservices and a small web application that demonstrates the system working. Further, it was required that events had consistency; that multiple instances of each service could run at once and work together; that events would be redelivered if a service crashed during processing; and that each service's ephemeral storage could be rebuilt from the event bus if destroyed.

In particular, I managed and led development on the event bus and the superclient. The event bus, written in Rust, is the central server that manages and persists events while ensuring consistency, correlation and that microservice clients can scale horizontally. The superclient, also written in Rust, is a framework for building clients in Lua with persistence and a REST API.

This involved working with the team to design and implement the various solutions that allowed the system to achieve the desired properties; to streamline and improve our development processes; and to mentor other team members in fixing bugs and building features when working with unfamiliar technologies.

Relay.sc

SIDE PROJECT

July 2016 - November 2016

During 2016, I developed a website for a video game fan site Relay. In this project, I worked with the staff at Relay to create a performant, easy-to-maintain site that could easily be built upon with more advanced functionality.

A major component of this project was a news search system - I integrated Algolia's Hosted Search into the website - allowing for seamless indexing from the CMS administration panel that resulted in a instant search system for the visitors, complete with multi-facet filtering. Relay's new website launched in November of 2016 to great feedback from the staff and their fans.

Education

University of Glasgow

Glasgow, Scotland

SOFTWARE ENGINEERING MSc

September 2015 - present

I'm a experienced fourth year Computer Science student at the University of Glasgow. I also took Mathematics and Statistics in my first year and continued with Mathematics in my second year. I was also awarded the "Best Computing Science Student Intending Single Honours" award for my performance in first year. As my degree's fourth year, I spent a year working at Codeplay Software.

Glasgow Calidonian University

Glasgow, Scotland

NUFFIELD FOUNDATION PLACEMENT

May 2014 - July 2014

During 2014, on a summer placement at Glasgow Caledonian University, I implemented a colour-based tracking algorithm from a research paper in C++ with OpenCV. The implementation was capable of full 360 tracking of multiple objects simultaneously even when the object leaves and re-enters the frame.

Further, I also implemented a program that uses the process of Non-Photorealistic Rendering to make an image look less realistic - in essence, creating a cartoon out of an image. This made use of the excellent OpenCV and involved two distinct stages - extracting the edges from the image and overlaying them on a copy of the original image that uses a reduced set of colours.

Vale of Leven Academy

Alexandria, Scotland

SECONDARY EDUCATION

August 2009 - May 2015

As well as gaining independence and time-keeping skills, I achieved the following qualifications:

- **Advanced Highers:** Computing (A), Graphic Communication (A)
- **Highers:** Mathematics (A), Physics (B), Chemistry (B), Geography (B)
- **Standard Grades:** English (2), German (2)

Open Source Contributions

 rust-lang/rust	54 merged pull requests since November 2017
 mockersf/jenkins-api.rs	3 merged pull requests since June 2018
 rust-lang/rust-central-station	2 merged pull requests since April 2018
 chronotope/chrono	1 merged pull requests since July 2018
 RobertSmith/Orchestrator.Net	1 merged pull requests since April 2017
 pyeve/eve	1 merged pull requests since June 2015