

# David Wood

Software Engineer · Edinburgh, Scotland · [hello@davidtw.co](mailto:hello@davidtw.co) · <https://davidtw.co> · [@davidtwco](https://twitter.com/davidtwco)

## Open Source

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### **Rust Programming Language**

*Compiler Team Co-Lead*

Aug 2023 - Present

In collaboration with my compiler team co-lead, I'm responsible for representing the Rust compiler team; owning the compiler team's decisions; making unilateral approval for trivial or urgent issues; driving the team's weekly meetings; communicating with other members of Rust leadership; authoring communication on behalf of the team; and supporting compiler team members in their contributions.

Since becoming co-lead, I have created a [roadmap for my term as co-lead based on team member feedback](#), landed an RFC to restructure the compiler team, improved review queue capacity, and written about the team's [ongoing work](#), [review queue](#), and the [project's structure](#).

### **Rust Programming Language**

*Compiler Team Member*

Oct 2017 - Present

As member of the Rust compiler team, I am responsible for the implementation and maintenance of the Rust compiler, which involves having merge privileges; being assigned patches to review; fixing high-priority bugs; and reviewing backports, major change proposals and compiler RFCs.

I regularly contribute bug fixes, diagnostic improvements and refactorings; as well as lead or contribute to engineering efforts to implement new features in the Rust compiler. Since starting to contribute to Rust, I have been involved in various working groups, including: [async/await](#), [diagnostics](#), [debuginfo](#), [meta](#), [polymorphization](#) and [non-lexical lifetimes](#).

## Work Experience

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### **Huawei Technologies Research & Development UK Ltd.**

*Senior Software Engineer A, Programming Languages Lab*

Edinburgh, Scotland

November 2022 - August 2024

Within the Central Software Institute of Huawei R&D, I leveraged my Rust experience to accelerate and guarantee Rust's successful adoption, involving:

- contributions to the upstream Rust compiler, prioritising features and bugs which impacted Huawei's business units
- directly working with internal customers to recognise Rust opportunities, advising and assisting teams adopting Rust, and identifying and prioritizing requirements for upstream contributions
- supporting HQ colleagues in maintaining the internal toolchain
- knowledge sharing of Rust compiler internals
- participation in Huawei's Technical Management Committee to define internal coding standards for Rust
- internally representing the Edinburgh Research Centre within Huawei by promoting my work in company publications and presenting to leadership from other parts of the organisation
- externally representing Huawei by speaking at international conferences and attending as a sponsor

I was awarded Huawei's "President Award of the 2012 Laboratories", "President's Award of the European Academy", "Gold Team Award", "Innovation Spark Award", and "Future Star" awards. I qualified for and earned an internal "Competency & Qualification" grade in Compilers & Operating Systems at Level 5.

### **Huawei Technologies Research & Development UK Ltd.**

*Senior Software Engineer B, Programming Languages Lab*

Edinburgh, Scotland

Aug 2021 - Nov 2022

### **Codeplay Software Ltd.**

*Senior Software Engineer, Infrastructure*

Edinburgh, Scotland

Nov 2020 - Aug 2021

I was the primary maintainer of Codeplay's continuous integration infrastructure and led the effort to rebuild the core infrastructure with NixOps to improve reproducibility.

In addition, I worked as a compiler engineer on SYCL support for NVIDIA GPUs which was contributed to Intel's DPC++. I implemented driver support in Clang for the `nvptx64-nvidia-nvcl-sycldevice` target, target-specific passes in LLVM, builtins in `libclc`, and various bug fixes to LLVM, Clang and the LLVM-SPIRV translator.

**Codeplay Software Ltd.** Edinburgh, Scotland  
*Software Engineer, Infrastructure* Sep 2017 - Nov 2020

**Scottish Engineering** Glasgow, Scotland  
*Software Consultant* Sep 2018 - Nov 2018

**Codeplay Software Ltd.** Edinburgh, Scotland  
*Intern Build Engineer* May 2017 - Sep 2017

I rebuilt the entirety of Codeplay's continuous integration infrastructure in my internship - introducing automated re-provisioning of Ubuntu, CentOS and Windows build nodes and improving the configuration management, vastly reducing the turn-around time of changes requested by engineering teams and downtime which impacted engineering team productivity.

**West Dunbartonshire Leisure** Alexandria, Scotland  
*Software Consultant* Apr 2015 - Feb 2017

**Polaroid Eyewear** Dumbarton, Scotland  
*Software Consultant* Jun 2014 - Jun 2016

## Education

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**University of Glasgow** Glasgow, Scotland  
*MSci Software Engineering with Work Placement, Honours of the First Class* Sep 2015 - Jun 2020

I graduated with a GPA of 20.0 (out of a maximum 22.0) and completed my MSci project on "Polymorphisation", a code-size optimisation in the Rust compiler to reduce unnecessary monomorphisation during code generation. In my first year, I was awarded "Best Computing Science Student Intending Single Honours" and in my final year, "Most Outstanding Project in MSci SE WP".

In my third year, I worked in a team tasked with creating a event-sourced financial platform for Avaloq, a banking software company. For the duration of the project, I managed and led development on key components of the project, written in Rust and mentored other team members in fixing bugs and building features in unfamiliar technologies.

**Glasgow Caledonian University** Glasgow, Scotland  
*Nuffield Foundation Placement* May 2014 - Jul 2024

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

## Memberships

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**Open Source Initiative**  
*Individual Membership* Feb 2020 - Present

## Awards

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**Programming Languages Software Award** Copenhagen, Denmark  
*ACM SIGPLAN* Jun 2024

## Conference Speaking

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**QCon** Shanghai, China  
*Split DWARF in rustc* Nov 2022

## Published Articles

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**Inside Rust Blog**  
*Contribute to the diagnostic translation effort!* Aug 2022

**Inside Rust Blog**  
*Improving `async-await`'s `Future is not Send`" diagnostic* Oct 2019