Joel Hutton

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EDUCATION

BEng (Hons) Computer Science and Electronics (1st)   **2013-2017**

University of Edinburgh

Awards: NEC semiconductor prize for excellence in first year engineering.

Distinguished honours dissertation.

Scottish Highers   **2008-2013**

Balfron High School

English: **A**, Maths: **A**, Physics: **A**, Chemistry: **A**, Biology: **A**

EMPLOYMENT HISTORY

Senior Engineer - GNU Tools/DSG Performance Solutions   **2019-present**

Arm, Full-time

Responsibilities:

Performance optimisation and profiling in C/C++.

Working with clients to help them understand Arm architecture and improve performance.

GCC and LLVM performance investigations and codegen comparisons to direct future work.

Integrating new architectural features to compiler toolchain.

Line management and technical mentoring.

Key achievements:

Added autovectorization functionality to upstream GCC giving customers significant performance improvements.

Identified key optimisations to implement in LLVM and GCC giving 10% benchmark performance uplift.

Introduced internal CI/CD to improve team's efficiency.

Firmware Engineer - Trusted Firmware   **2017-2019**

Arm, Full-time

Firmware engineering and tools in C, Arm v8-A assembly and Arm v7-A assembly.

Maintainer of CI/devops in Shell and Python.

Spectre security mitigations for Trusted Firmware.

Software Engineer   **2018**

Arm, Full-time 3 month secondment

Researching Mixed Reality technologies, developing test applications in Unity.

Tutor   **2015-2017**

Self-employed, part-time

Tutoring of high school students in Maths, Physics and Computer Science while studying.

Software Intern   **2016**

Arm, 12 week summer internship

Workload automation for testing of the Energy Aware Scheduler (EAS).

Software Intern   **2015**

Arm, 12 week summer internship

Dev-Ops scripting with Jenkins and Python/Shell for Open Source Software department.

Software Engineer   **2014**

Interface3/Tigerface Games, Part-time university job

Core developer of series of multi platform games for children with autism using Unity, programming in C#.

Software Engineer   **2014**

Chamberlain McBain, Full-time summer job

Front-end and back-end web development in PHP, HTML, CSS, Javascript, SQL etc. Developing multi-user system.

STEM Teacher **2013**

COSAT Khayelitsha-Cape Town, Full-time volunteer
Volunteer STEM teaching of high school children in an underprivileged community.

SKILLS

Programming languages

C/C++, Python, Shell, Arm v8-A assembly, Arm v7-A assembly, SQL, Javascript, php, html, go

Software development

Linux, Git, Gerrit, Jenkins, Docker, GDB debugging, Benchmarking and optimization, profiling, CBMC formal verification