Jack Bond-Preston

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Education

University of Bristol — Bristol, UK
BSc in Computer Science (1st Class Hons) — 2017–2020
- Awarded prize for best second-year group software development project.

Experience

AMD, Inc. (formerly Xilinx) — Cambridge, UK
Software Engineer in Adaptive and Embedded Computing Group — 2022–Current

Arm Ltd. — Cambridge, UK
Graduate Software Engineer in Open Source Software Group — 2021–2022

- Porting low-level software to the Morello (CHERI) platform.
- Produced patches in C and AArch64 assembly as part of a project porting the open-source C standard library implementation musl to a new prototype platform.
- Ported larger components of the C library, including the memory allocator and POSIX threads. Considered security and hardening against memory safety bugs at every stage of design and implementation.
- Created a minimal test distribution of Linux for use on an Arm Fixed Virtual Platform, with the ability to run userspace applications in pure-capability mode. This provided the framework for adding FVP-based testing to the CI pipeline (alongside existing emulator-based testing) for further proof of functionality.
- Liased with multiple teams to ensure coordination between libc, kernel ABI, compilers and debuggers.
- Provided code review including feedback and improvements for patches developed by others for the musl project.

University of Bristol — Bristol, UK
Teaching Assistant in Department of Computer Science — 2019–2020

- Delivered and created content for several Computer Science courses, including content involving operating systems, concurrency, and a software engineering project.
- Provided guidance and troubleshooting assistance to students in both in-person and online lab sessions, including for a course in which students develop a basic Armv7-A multitasking kernel.
- Interviewed students in viva-style coursework assessments, and assisted with subsequent coursework marking.
- Assisted with the creation and improvement of lab sheets (including skeleton and solution code).

Skills

- **Low-Level Software & Architecture:** C, C++ (inc. 11/17/20 standards), Armv7/8/9 (assembly & architecture), RISC-V, CHERI, GNU Make, CMake.
- **Software Engineering:** Git, Gerrit, Linux, Bash & Zsh, Python, Java, Haskell, Agile, Jira.
- **Web Development:** HTML5, Modern CSS, ECMAScript 2015+ & Typescript, Vue.js, Spring Boot, SQL.
- **Teaching:** Giving lectures & seminars, interviewing, marking coursework, giving knowledge sharing presentations.
- **Design:** 3D modelling, vector graphics, Photoshop.