Jack Cripps

BSc Music, Multimedia and Electronics with Year in Industry, MIET
The University of Leeds

17 Ham Park Rd, London, E15 4HE | 07793007533 | jack.cripps@hotmail.co.uk | linkedin.com/in/jackcripps

Personal Profile

A diligent and attentive engineer involved in all areas of software development with a particular interest in embedded and backend systems. I'm enthusiastic about creating clean and efficient products along with a desire to combine my passion for engineering with creativity and purpose. Always eager to learn about new techniques and technology to further my knowledge and eventually seeking to lead others in attaining their goals.

Industry Experience

Monitor Audio/Roksan – **Graduate Embedded Software Engineer:** **Aug 2019 – Present**

- **Software Development** – Worked on an ESP32 based FreeRTOS system in C/C++, with asynchronous multithreading, communicating over SPI, I2C, I2S, UART, and utilising WiFi and BLE stacks.
- **Cloud Development** – Used AWS to perform updates, registration and system monitoring of IoT devices. Wrote scripts to test these systems.
- **Build Tools** – Improved the company use of software and hardware version control, ensuring better visibility of the software team's work to the rest of the company.
- **Linux** – Maintained and worked on Linux systems in C/C++/Python.

Focusrite Audio Engineering – Hardware Design Engineering Intern: **Aug 2017 – Jan 2019**

- **Microcontrollers** – Worked within the ST ecosystem, writing firmware in C/C++ for both commercial and test equipment – practicing TDD principles and CI/CD principles for embedded development.
- **Debugging** – Used oscilloscopes, logic analysers and audio analysis tools to prove design parameters and diagnose issues in digital and analogue circuits.
- **Leadership** – Manager of the alternative parts process to identify EoL and unavailable components. Worked on finding and testing suitable replacements and chairing meetings with QA, Hardware and Production teams to work on the approval of new parts.
- **Project Planning** – Worked on approach plans, deducing time frames and requirements.
- **Mixed Signal Circuit Design** – Developed bespoke digital and analogue hardware to support the testing and validation of commercial products and in-house test fixtures.

Education & Qualifications

The School of Electrical and Electronic Engineering, University of Leeds: **Sep 2015 – Jun 2019**
BSc Music, Multimedia and Electronics with a Year in Industry. 78% - First Class Honours

Modules	Final Grade
Embedded Systems Project	96%
Digital Electronics & Microelectronics	88%
Communications, Networks & Signals	99%
Engineering Mathematics	91%
Intro to the Sciences of Music	94%
Mobile Applications Project	93%
Circuit Analysis & Design	93%

Allestree Woodlands School and Sixth Form: **Sep 2008 – Jul 2015**
A Levels: Maths – A*, Physics – A, Biology – A GCSEs: 5 A*, 4 A, 1 B

Technical Skills

C/C++/Objective-C	AWS (Cloud Services)	WiFi/Bluetooth	Oscilloscopes/Logic Analysis
Some Python	ARM Cortex-M, ESP32, TI	IAR EWARM	PCB Design and Manufacture
A little MATLAB	Git and some CI/CD	ST HAL	CAD Design
A little Go, JS, HTML	IoT Devices	Linux	SMD Rework (QFP, 0201+)

Relevant Projects

- **3D Granular Synthesis Engine** – Electronics final year university project in C++ focussed on drawing links between an agent in a simulated 3D emergent system (virtual birds in a flock) and a snippet of audio in a granular synthesiser. Responsible for all audio/DSP programming using JUCE and ambisonically encoding audio output to a speaker array.
- **Image-To-Sound Conversion** – Music final year university project using OpenCV with C++ and JUCE to analyse a camera feed of shapes drawn on a piece of paper and use them to create audio output
- **Bus Power Board** – A product developed from scratch for use by R&D teams to sit between a USB device or other power source and a host computer providing the ability to dis/connect power, data and control signals and measure time-aligned voltage, current and power. Controlled through a bespoke CLI, the device allowed for complete automation to be a feature in the test harness for commercial products.
- **Castlemania** – Created a 2.5D platformer game on a Cortex-M4 in C++, with a game and physics engine modelled on the original Castlevania series.
- **Game of Life** – Developed an implementation of Conway's Game of Life in C that acted as an algorithmic music generator, producing multi-channel MIDI data to send to an audio workstation as well as an on-board synthesiser.

Additional Relevant Skills

- **Teamwork –** I worked in a small, tight-knit hardware team at Focusrite that required a lot of inter-project work and communication in order to succeed in delivering projects that met specification.
- **Time Management –** My position during the placement year meant that I had to manage multiple streams of work in parallel, working with the entire hardware team in a supportive role to deliver results across multiple projects. This required me to plan ahead but also be reactive to the fast-paced nature of a team with more projects to release than members.
- **Self Management –** Carrying out live audio/visual processing with no margin for error at music gigs and other AV installations.

Other Work Experience

- **University of Leeds:** Course Representative and Peer Mentor: **Sep 2015 – Jun 2019**
- **Zebra Finance:** Administration Assistant: **June – July 2016**
- **Allenton Homecrafts:** Sales Assistant: **2011 – 2015**
- **Rolls Royce:** Work Experience (Tooling Division): **June – July 2012**

Interests & Achievements

- Head of School award at University of Leeds.
- Building and maintaining synthesisers, audio effects units, amplifiers and guitars.
- Avid runner, competing in long-distance races.
- Homebrewing enthusiast making a variety of beer for family and friends.
- Enjoy home cooking, especially vegan junk food.

References

Ross Chisolm: ross.chisolm@focusrite.com
Line Manager – Focusrite

David Moore: d.moore@leeds.ac.uk
Personal Tutor – University of Leeds