

JOSEPH SMITH

📍 Newcastle Upon Tyne, UK — ✉ josephsmithj@gmail.com — 🌐 josephjamesmith.com — 🌐 josephjamesmith

EDUCATION

University of York, UK

Bachelor of Engineering: Electronic and Computer Engineering with a Year in Industry

Sep 2020 — Jul 2024

Grade Awarded: 2:1

- Final Project Dissertation: “Analysis of Methods for Control of a Robotic Hand: Hand Vision, Facial Expression & EEGs”, involving work on a Python implementation of methods for control of a ROS controlled robot, graded 70%
- Notable Modules: Digital Engineering (FPGA), Cloud and Distributed Computing, Control Systems, Digital Design with HDL, Java Programming, Algorithms and Numerical Methods

UKESF Scholarship

Feb 2022 — Aug 2024

- Awarded scholarship including an annual bursary, paid work placement, residential workshop and mentorship
- Undertook volunteering work encouraging school children to consider a educational pathway into electronics and mentoring new UKESF scholars
- Engaged in a four-day residential course centred around professional development and designed to boost interpersonal skills

EXPERIENCE

BAE Systems

Software Engineer

Rochester, UK

Jun 2025 — Current

- Rapidly learnt and applied various aerospace communications standards including ARINC-653, MIL-STD-1553, MIL-STD-1760
- Modelled and visualised defence bus protocols using MATLAB, Simulink and Stateflow
- Independently updated a 20-year-old proprietary C++ library for implementing safety-critical software
- Controlled a custom downstream hardware device using Microchip AVR using MPLAB X IDE and MCC by designing and implementing a UART protocol
- Presented software solutions for complex aerospace systems to governmental and defence clients
- Conducted interviews for and managed early-careers software engineers

ITDev

Embedded Systems Intern

Southampton, UK

Sep 2022 — Jun 2023

- Completed a Year in Industry placement as part of the UKESF scholarship at ITDev, a Southampton based technology consultancy
- Tested an open-source SD card multiplexing device (MuxPi), which included loading new firmware, ensuring the board's functionality, and creating documentation on use of the device
- Configured a Raspberry Pi to play 4K60 HDR video and capture the output using a capture card and FFmpeg, allowing for fine control of frame rate, bitrate, and video encoding
- Developed a Python script to generate test videos with auxiliary QR codes for a video test framework, using MoviePy, Pillow, and NumPy libraries
- Successfully set up Jenkins pipelines for CI/CD of a large pre-existing FPGA project, including writing the groovy pipeline script and documentation for replicating the build environment - received very positive feedback from client
- Involved in the full creation of an IP FPGA block for converting from SDR to HDR using SystemVerilog and the Xilinx toolchain including planning, software example implementation, hardware implementation, and tooling

Jesmond Pool and Gym

Casual Lifeguard

Newcastle Upon Tyne, UK

Sep 2018 - Sep 2020

- Completed National Pool Lifeguard Qualification (NPLQ) twice and committed to continuous professional development
- Ensured the safety of customers, served customers at reception using POS system, maintained clean state of facilities

TECHNICAL SKILLS

- **Programming Languages:** Python, C++, C, MATLAB, Java, Bash, Tcl
- **Tools and Frameworks:** Git, Jenkins, FFmpeg, Xilinx Vivado, Xilinx Vitis, SVN, Agile

EXTRACURRICULARS

Reece Scholarship

Embedded Systems

Newcastle Upon Tyne, UK

Mar 2019 — Jan 2020

- Engaged in a North-East based group engineering project funded by the Reece Foundation
- Challenged with creating an IoT cold-case tracking device to give live feedback on the state of shipments of sensitive medical goods
- Utilised a Pytrack board with a LoPy4 module to track shipments using GPS, Sigfox, Bluetooth and Wi-Fi and send data to a web service which redirected the data to a website displaying collected information using REST API
- Produced a working product and won 2nd prize out of ~12 groups