JOSEPH SMITH

📍 Newcastle Upon Tyne, UK — ✉ josephjsmithj@gmail.com — 📞 (+44) 7935 123238 — 💼 josephjamessmith

EDUCATION

University of York, UK   Sep 2020 — Jul 2024
Bachelor of Engineering: Electronic and Computer Engineering with a Year in Industry   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

ITDev   Southampton, UK
Embedded Systems Intern   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

Reece Scholarship   Newcastle Upon Tyne, UK
Embedded Systems   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

TECHNICAL SKILLS

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

EXTRACURRICULARS & RESIDENTIALS

EDT Headstart   Sheffield, UK
Residential Trip   Jun 2019

- Attended an electronic engineering residential trip held at Sheffield University and run by Engineering Development Trust (EDT)
- Completed a week programme building an ultrasound sensor which was implemented on a Lego Mindstorm robot to direct it towards a beacon
- Improved skills in soldering, PCB construction, calibration and programming, also led to the decision to pursue further education in electronics

EDT Inspire   Glasgow, UK
Residential Trip   Jun 2018

- Took part in a week-long general engineering residential trip held at Glasgow Caledonian University and run by Engineering Development Trust (EDT)

- Collaborated with a group to construct a bridge that a programmed Lego Mindstorm robot could travel over before completing a maze

Competitive Swimming

- Competed for Newcastle Swim Team at multiple North East Regionals (NERs) in 200m Butterfly and 50m Backstroke

OTHER EMPLOYMENT

Jesmond Pool and Gym   Newcastle Upon Tyne, UK
Casual Lifeguard   Sep 2018 - Sep 2020

- Completed National Pool Lifeguard Qualification (NPLQ) twice necessitating Continuous Professional Development
- Ensured the safety of customers, served customers at reception using POS system, maintained clean state of facilities