Harry O'Brien

Website: harry-obrien.github.io

Email: harry2864@gmail.com
Ph.: +44 7936 520 818
GitLab: gitlab.cs.man.ac.uk/a64070ho

EDUCATION

University of Manchester — Manchester, UK
B.Sc. in Computer Science — Sep 2019 – Aug 2022 (current)
Integrated Engineering Foundation Year — Sep 2018 – Aug 2019

Gosforth Academy — Newcastle Upon Tyne, UK
3 A-Levels in Maths, Further Maths and Computer Science. A, B, B respectively — Sep 2016 – Aug 2018
11 GCSEs with an A* in English Language and Math — Sep 2014 – Aug 2016

EXPERIENCE

University of Manchester Hyperloop *(hyperloopmanchester.com)* — Manchester, UK
Software Developer and Head of Electronics — June 2020 - Current

- **Embedded Electronics Developer**
- I have been appointed as the lead software developer for the University of Manchester Hyperloop program. The choice was made by the previous lead due to my interest, skill-set and commitment to work on and reliably complete tasks assigned to me to a very high standard. We use ROS on an O-Droid and firmware written on a Teensy 4.0 for interfacing all hardware.

University of Manchester Unmanned Aerial Vehicle Society — Manchester, UK
Head of Software and Electronics — June 2020 - Current

- **BAE Drone Swarm Competition**
- Implemented a wireless ad-hoc communications network using batman-adv and wrote a command and control program in C++ to run on a set of Raspberry Pi's on custom built quad-copters to direct the swarm at a high level. Now developing software to track and target opponent drones whilst in the air using Y.O.L.O., Open CV and C++.

HACKATHONS

Graphene Hack — Nov 2019

- I participated in the first-ever Graphene Hackathon at the Graphene Engineering Innovation Centre as a team of six. As a team, using graphene ink and C++ on an Arduino, we produced a wirelessly-connected glove in 24 hours which senses gestures and touch commands using printed graphene tracks.

Google Hash Code — February 2020

- Google Hash Code is an event that takes place online in which students complete one problem with five different input files. Although my team did not qualify for the final, we were able to achieve full points in the example round and have gained valuable experience to compete again this year coming.

PROJECTS

See full list of projects on hobrien.ddns.net

Mint Crispr — 2018 - Current
Flutter, Bluetooth LE, Embedded Devices, TDD

- As part of a research project, I am producing a novel low-cost diagnostics platform to diagnose childhood cancer in Malawi using CRISPR-Cas14.

Bare-Bones Raspberry Pi OS — 2018-2019
Raspberry Pi, C++, C, ARM Assembly

- Built a custom, bare bones OS for Raspberry Pi following several tutorials and information sources found online.

SKILLS AND INTERESTS

- **Programming:** Well versed in C, C++, Python, Java, Swift, Dart and PHP. Learning Verilog and ARM assembly.
- **Hardware:** Embedded devices development, robotics and micro air-vehicle development. 3D design and printing.
- **Additional:** I enjoy rock climbing, snowboarding, and continue to play on a rugby team having been captain in 2016/17. I am also a keen musician, regularly playing the piano, guitar, bass, and drums.