ARAN MCCONNELL

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Software Engineer and C/C++, Python, Typescript Developer interested in ML, AI, using tech to accelerate a greener future, and tech for good.

EXPERIENCE

CaptainApp   **Feb. 2024 – Present**
Software Engineer   *Bristol, UK*
- Added functionality to a lighting control app with Typescript cloud functions running on Firebase.
- Generated SEO content for a website programmatically using genAI.

Career Break   **Nov. 2022 - Dec. 2023**
Took a working holiday in Canada to focus on snowboarding and climbing   *B.C, Canada*

XMOS   **Oct. 2021 – Nov. 2022**
Graduate Software Engineer   *Bristol, UK*
- Developed the first public release of internal Python APIs for utilising our AI acceleration framework. These APIs were designed to allow seamless migration from other AI frameworks such as Tensorflow Lite.
- Wrote optimized neural network operators in C++ to optimize performance on XMOS silicon.
- Wrote compiler passes in MLIR to optimise the above operators in Tensorflow Lite models.
- Set up CI for testing my work using Jenkins
- Investigated and began a migration of testing within my team to Github actions.
- Collaborated within a small team that was a mix of remote and hybrid in the UK and North America.

Beko R&D   **June - Sept. 2020**
Summer Intern   *Cambridge, UK*
- Designed and conducted experiments in the lab, analysing the results in Python.
- Built an evaluation kit for testing a novel measurement method in production. Worked with IMUs, and Sensor Fusion techniques on microcontrollers.
- Co-Invented a Patent under application.

Lascar Electronics   **June - Sept. 2019**
Summer Intern   *Whiteparish, UK*
- Redeveloped firmware for an industrial panel meter. EFR32 Platform.
- Had a major role in developing the firmware for a new flagship datalogger using FreeRTOS, and low-power design.

EDUCATION

MEng Electronic Engineering   **2021**
University of Southampton, First Class Honours   *Southampton, UK*
- Masters group dissertation on Recognising Activities of African Wild Dogs Using Machine Learning
- 94% in Advanced Machine Learning
- 71% in Foundations of Machine Learning
- 76% in Computer Vision

A Levels   **2017**
Gower College Swansea   *Swansea, UK*
- A - Mathematics, Further Mathematics, and Physics
- A - AS Level Chemistry

Technical Skills

Languages: English (Native)
Programming Languages: C, C++, Python, Typescript
Frameworks: Tensorflow, Django, NextJS
Cloud & Database: Firebase, SQL
Developer Tools: Git, Github Actions, Jenkins, Bazel, Docker, Jira, VS Code

Projects

4th Year Group Dissertation - Recognising Activities of African Wild Dogs using Machine Learning   **Report**

Investigated a variety of machine learning and deep learning techniques to predict the behavior of African wild dogs from a collar-mounted sensor. The data used for training was all self-collected and labeled. The final model made great use of time domain features from Fourier and wavelet transforms, and utilised deep learning techniques.

Predicting used car prices using machine learning   **Report**

An exploratory project using the Kaggle Used Cars database to produce a model that accurately predicted a used car's price. Supervised techniques such as XGBoost and emsembling were utilised.

Website for University Surf Club   **Site | Source**

- Built using Django, HTML, CSS, and Bootstrap

- Developed custom features such as users, events, equipment logging and borrowing, and a blog.

Honours and Awards

UKESF - UK Electronic Skills Foundation Scholar   **Oct. 2019 - June 2021**
Sponsoring Company - BEKO R&D

- One of 50 students in UK Electronic Engineering courses to receive a UKESF scholarship.
- I attended a 4-day professional development workshop with the UKESF, and spent a summer as an intern with my sponsoring company BEKO R&D.

Gold Crest Award   **2017**
Engineering project With Swansea Bay Tidal Lagoon

Organisations

Southampton University Formula Student   **2018 - 2020**
Electronics Team   *Southampton, UK*

Southampton University Wakeboarding Club   **2018 - 2021**
President, Treasurer, and Social Secretary   *Southampton, UK*

Southampton University Surf Club   **2019 - 2021**
Vice President, and Trip Secretary   *Southampton, UK*

Southampton University Kitesurfing Club   **2020 - 2021**
Treasurer   *Southampton, UK*

Interests

ML, Generative AI, Health Technology, Green Tech, Edge Computing, Kitesurfing, Surfing, Climbing, Snowboarding, Mountaineering, Ski Touring, Cycling, and Trail Running.