



Skills

- > **AI/ML:** TensorFlow, PyTorch, LLM fine-tuning (LLaMa, Qwen, Phi), NLP frameworks, model evaluation, Application development using LLMs
- > **Data Science:** Pandas, NumPy, data analysis, data visualisation, benchmark evaluation, public sector data
- > Front-End: JavaScript, Node.js, React, UI/UX design
- > **Programming:** Python, TypeScript, Haskell, C/C++
- > Version Control: Git, GitHub Actions

Experience

S University

Masters project - visual music editing pipeline with CQ spectrograms

- > Demonstrated using advanced signal processing techniques to render an editable spectrogram of a song in an ordinary image format.
- > Implemented a complete data pipeline for spectral analysis and reconstruction of the music source using PyTorch.

Edinburgh cycle share infrastructure analysis - data analysis and presentation

> Analysed usage trends from Edinburgh's cycle rental data during COVID-19 using Python data science packages.

```
Pandas :: NetworkX :: Matplotlib :: Seaborn :: Scipy :: Geopandas
```

LLM fine-tuning

> Fine-tuned LLaMa and Qwen to generate machine readable calendar invites from event descriptions like "next tue 2 til 4pm at the pub".

```
PyTorch :: LLaMa :: Qwen :: HuggingFace :: Unsloth
```

Metaheuristic optimisation algorithms using ML data processing

- > Implemented classical optimisation algorithms using modern tensor code.
- > Speed increase of 100x over the single threaded algorithms.
- > Particle swarm optimiser and genetic algorithm puzzle solver.

TensorFlow

Tenuto - Robot piano tutor

- > Developed realtime hardware and control software for a robotic piano tutor.
- > Key player in a team of 10 students.
- > Product demo rated best among 23 teams by technology and business experts.

Personal projects

Wireless measurement device for understanding impact forces on gymnasts

> Created a wearable harness with inertial measurement hardware, collected data over Bluetooth using Python API.

> Analysis and visualisation to gain insights into physical preparation.

High school

Scottish Baccalaureate in STEM - wireless communication using visible light

- > Highest Baccalaureate grade for the Angus district (2019).
- > Learned embedded programming, electronics, signal processing and telecommunications; developed a relay chat proof of concept in an independent research project.

S Education

Edinburgh University - MInf (Hons) Informatics (2019-2025)

- > 2:1 (Masters Level)
- > 77% Project mark (Masters Level)
- > Merit (Masters Level)
- > Consistent high marks for inventiveness, quality and documentation on programming projects.

Arbroath High School (2013-2019)

> Proxime Accessit 2018.



☐ QuickWord - UX and frontend developer (May 2024 - Ongoing)

Al scheduling app

- > Design the UX and integrate AI technology into the user workflow.
- > Developed bespoke elements for the user interface.

```
React :: Node.js :: OpenAl
```

Inkwell PR - Firebase and React developer (Jan 2024 - Aug 2024)

Startup using AI to write press releases

- > Combining the GPT-3 model with expert curated prompts to create more effective press releases.
- > Implementing payment and subscription models.

```
React :: Firebase :: Stripe :: OpenAl
```

PlayerData - Firmware engineering intern (Jun - Sep 2023)

Wearable technology for team sports

- > Developed virtual driver testing framework for sports wearables using C/C++ on ARM Cortex-M microcontrollers.
- > Setup of driver code debugging on QEMU and the Zephyr device emulator framework.
- > Hardware emulation for deployment on Nordic SoC.

```
C:: C++:: Zephyr:: QEMU:: Nordic SoC:: ARM Cortex-M:: JLink:: GDB:: Emulation:: Testing
```

Gymnastics - Strength coach (May 2023 - Ongoing)

University sports club

- > Organising and running a training programme.
- > Coaching and mentoring athletes.

Session planning :: Athlete preparation :: High performance sport

Strainburgh Fringe - Flyerer (Aug 2024)

Edinburgh Performing Arts Festival

- > Promoting fringe shows in the city centre.
- > Making ticket sales and creating positive interactions with the public.

Customer service :: Sales :: Public engagement

Other Jobs

Ď Costa Coffee	∯ Artisan Gelato		₩ Grant Westfield	∜ Wetherspoons
2022 - 2023	2022	2021	2021	2018-2019
Barista and till operator	Gelatier	Labourer	Beam saw operator	Porter and kitchen assistant

Community involvement

→ Gymnastics @ Edinburgh University

> Social and fundraising coordinator

- > Men's artistic gymnastics coach
- > Acrobatics display team 2022, 2023

Fundraising :: Coaching and mentoring :: Event organisation

Hearts Innovation Centre - Arcade Academy Mentor (Nov 2024)

Free coding club for children aged 6-10

> Mentoring children in game creation and programming.

Mentoring:: Inclusion

First Lego League - Mentor (2019-2020)

Robotics competition team

- > Organising Arbroath High School's First Lego League team.
- > Mentoring younger pupils about robotics and programming.

Scouts - Young Leader (2015-2019)

Scout group

- > Organising and running weekly activities.
- > Instructing skills such as outdoor skills, cooking and first aid.

UK Citizen UK Driving License

Immediate start