



Computer science graduate with a passion for building things.

# **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
- > Ethics and Citizenship: child safeguarding, economic equality, transport and urban design, conservation and rewilding.

# Experience

# **প** University

### Masters project - visual music editing with CQ spectrograms

- > Demonstrated using advanced signal processing techniques to render an editable spectrogram of a song in an ordinary image format.
- Working with PyTorch for tensor operations.

#### High performance metaheuristic algorithms using TensorFlow

> Used TensorFlow to implement GPU accelerated particle swarm optimiser and genetic algorithms.

#### Edinburgh cycle share scheme - data analysis and presentation

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

#### **Binary Abacus - Interactive binary learning tool for learners**

- > Built a modern, interactive web application using React to help learners interact with binary numbers in a more meaningful way.
- > Implemented various encoding options and technical levels (unsigned/signed binary, IEEE 754, ASCII).
- > Designed with responsive layout and multiple interaction modes (keyboard/mouse) for accessibility.

#### **Workout Mate - Gymnastics strength and conditioning app**

- > As part of a redesign project for the Hevy workout app, I developed a web app which now is used to provide the Edinburgh University Gymnastics club's strength and conditioning programme.
- > Used React, Astro and Github Actions to create a web app to help the club members perform \ workouts.

## Tenuto - Robot piano tutor

- > Developed hardware and control software for a robotic piano tutor concept, interfacing with Bluetooth LE MIDI and utilising wireless chips, microcontrollers, and high-power transistors to drive a solenoid array, with variable key velocity using PWM signalling.
- > Key player in a large team; product demo rated best among 23 teams by technology and business experts.

## Personal projects

### SendEvent app - NLP assisted events and invitations

> Uses a natural language processing framework to turn plain English descriptions of events into shareable formats.

#### 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 - Informatics (MInf) (2019-2025)

- > 2:1 (Honours Level)
- > 76% Project mark (Honours Level)
- > Expected Merit (Masters Level)
- > Consistent high marks for inventiveness, quality and documentation on programming projects.

## **Arbroath High School (2013-2019)**

> Proxime Accessit 2018.

# **Employment**

## Inkwell PR - Firebase developer (Jan 2024 - Aug 2024)

Startup using AI to write press releases

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

#### 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.

### Gymnastics - Strength coach (May 2023 - Ongoing)

University sports club

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

### 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.

Ď Costa Coffee	<b>贸 Artisan</b> Gelato	<b>⊞</b> Nairn's Oatcakes	⊯ Grant Westfield	¶ Wetherspoons
2022 - 2023	2022	2021	2021	2018-2019
Barista and till operator	Gelatier	Factory operator	Beam saw operator	Porter and kitchen assistant

# **Community involvement**

## **★**♂ Gymnastics - Edinburgh University

- > Social and fundraising coordinator
- > Men's artistic gymnastics coach

## **□** Turing Fest Volunteer (2024)

> Photographer and Media Assistant

## **♥** Hearts Innovation Centre - Arcade Academy Mentor (Nov 2024)

> Mentoring children in computer science and programming.

# **ṁ** 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 (2018-2019)

Scout group

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

### **♦ Brigend community volunteer**

- > Cafe assistant
- > Woodwork and construction volunteer

UK Citizen UK Driving License Immediate start