

## **Profile**

I'm a recent Informatics graduate with a strong foundation in AI, machine learning, and software engineering. Experienced in Python, data analysis, and building interactive web applications. I'm passionate about driving a public benefit from AI tools and eager to contribute to Storm ID's technical team. I work well in a team, am committed to learning quickly and upholding high standards of quality.

## **Technical Skills**

- > Programming: Python, JavaScript (React), TypeScript, Haskell, C/C++
- > AI/ML Tools: TensorFlow, PyTorch, computational pipelines, small language models, NLP frameworks
- > Data Science: Pandas, NumPy, data analysis, data visualization
- > Version Control: Git, GitHub Actions
- > Cloud: Familiarity with fundamentals of cloud computing; keen to pursue Azure certification
- > Other: UI/UX, hardware integration, public sector data

# **Experience & Projects**

### Al & Data Projects

- > Masters project graphically editable music transformations
  - > Implemented advanced signal processing and ML compatible mathematical transforms (NSGT) to demonstrate a novel music editing workflow.

> Working with tensor computation in pytorch for signal processing.

#### > High performance metaheuristic algorithms using TensorFlow

> Used TensorFlow to implement metaheuristic algorithms (particle swarm optimiser, genetic algorithm) leveraging CUDA.

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

> Analysed and visualised public sector transport data using Python and data science packages, providing actionable insights during the COVID-19 pandemic.

#### > Inkwell PR - GPT based press release generator

> Contributed to the development of a GPT based press release generator, refining the core service and integrating payment/subscription.

#### > SendEvent app - NLP assisted events and invitations

- > Used NLP tools to turn plain English phrases into structured, shareable iCal files.
- > Experimented with finetuning LLaMa, Qwen and Gemini models to perform advanced phrase NLU: "every second friday of june except 16th"

### Web & Software Projects

#### > Binary Abacus - Interactive binary learning tool for kids

- > Built a modern, interactive web application using React to help users learn about binary numbers, encoding systems, and bitwise operations.
- > Implemented features including multiple rows for simultaneous values, configurable bit columns, and various encoding options (unsigned/signed binary, IEEE 754, ASCII).
- > Created an intuitive UI with visual beads that change color based on position, keyboard shortcuts, and sound feedback.
- > Designed with responsive layout and multiple interaction modes (keyboard/mouse) for accessibility.

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

- > Developed a web app for the Edinburgh University Gymnastics club's strength and conditioning programme, using React, Astro, and GitHub Actions.
- > Collaborated with club members to refine the app and deliver a user-focused solution.

### **Hardware & Embedded Projects**

#### > 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 MOSFETs to drive a solenoid array, with variable key velocity using high-frequency control signals.
- > Key player in a large team; product demo rated best among 23 teams by technology and business experts.

#### > Wireless measurement device for understanding impact forces on gymnasts

- > Created a wearable harness with inertial measurement hardware, collected data over Bluetooth using Python.
- > Performed analysis and visualisation to gain insights into physical preparation.
- > PlayerData Full SoC emulation for driver code testing
  - > Developed virtual driver testing for sports wearables using C/C++ on ARM chips.
  - > Learnt about realtime and low power systems.
- > Scottish Baccalaureate in STEM wireless communication using visible light
  - > Highest Baccalaureate grade for the Angus district (2019).
  - > Self-taught in embedded programming, electronics, signal processing and telecommunications; developed a relay chat proof of concept as an independently organised project.

# **S**Education

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

- > 80% average marks in quality & readability of code and documentation.
- > Python data science packages (Introduction to Data Science)
- > Deploying a REST service with Azure. (Applied Cloud Programming)
- > Machine learning on Google Colab. (Machine Learning Practical)

### Arbroath High School (2013-2019)

> Proxime Accessit 2018.

# **Employment**

inkwell PR - Full stack developer (Dec 2023 - Aug 2024)

PlayerData - Firmware engineering intern (Jun - Sep 2023)

### **Other Experience**

<b>⊕</b> Costa Coffee	<b>∮</b> Artisan	Nairn's	<b>⊯</b> Grant	<b>   Wetherspoons</b>
Tosta Corree	# Artisan	Oatcakes	Westfield	ij vvetnerspoons
(2022 - 2023)	Gelato (2022)			(2018-2019)
		(2021)	(2021)	

## Voluntary & Non-technical Roles

# **A** Edinburgh University Gymnastics Club

### Social and fundraising coordinator

- > Promoted events on social media and in person, increasing social attendance from 5 to 20+ people.
- > Planned and organised social activities and fundraising initiatives, collaborating with other sports clubs.
- > Worked as a team with committee, coaches, and club members.

#### Strength and conditioning coach

> Organising and leading a training programme, collaborating with athletes and coaches to achieve performance goals.