Thomas Bale

thomasbale.com | tokbale@outlook.com | linkedin.com/in/thomas-bale-5863542a4

Experience

UK HPC Student Team, UKSCC May 2025 –

- Representing the UK at ISC25. Application optimisation for OpenMX and LLMs (llama).

Machine Learning Researcher, University of Bristol Feb 2025 –

- Developed scalable NN workflows for generating photorealistic, emotional faces for psychological research.

Co-Founder & Operator, Veloworks Components Sep 2024 -

- Co-founded and operate a small business producing 3D-printed performance cycling components.
- Manage operations encompassing sponsorship, marketing, technical stages, and financial activities.

Machine Learning Software Engineer, DigitalU3 Sep 2024 – Mar 2025

- Engineered a machine learning-based system adaptable for various IoT integrations, focusing on efficiency.
- Developed a scalable web application, integrating backend functionalities and a structured database.

Machine Learning Engineer, DeepSynthetics Dec 2024 - May 2025

- Developed advanced workflows for predictive modelling in all weather horse racing.
- Enhancing model performance by 250%+ through diverse machine learning methodologies.

Founder & President, University of Bristol Quantum Computing Dec 2024 – Apr 2025

- Established and expanded a society to host the university's inaugural quantum computing hackathon.

Education

University of Bristol, BSc in Computer Science Sep 2023 – Current

- 83.5% avg; ranked top in cohort: CSA
- 4 x Hackathon Wins, Team Lead and Coach (MIT iQuHack), UK HPC Cluster Challenge
- Ironman Switzerland, Social Secretary (Swimming), Triathlon Club.

Colchester Royal Grammar School, A-Levels Sep 2021 – Jul 2023

- A*A*AA - Computer Science (ranked 1st in cohort; 100% NEA), Maths, Further maths, Physics

Felsted School, 11 x grade 9 GCSEs Sep 2018 – Jul 2021

Technical Projects

Quantum Cross-Chain Arbitrage - $5000 Win

- Built a quantum-enhanced arbitrage bot for executing cross blockain flash loans.
- Led backend: graph construction, liquidity/slippage modeling, and flash loan execution.

Concurrent vs Distributed Implementations Analysis

- Built concurrent and distributed implementations of Conway's Game of Life using Go, AWS and RPC.
- Optimised scalability and fault tolerance: reducing communication overheads, halo exchange and more.

Technologies and Skills

Languages: Python, Go, Java, C, C#, SQL, Haskell, React

Frameworks/Tools: PyTorch, TensorFlow, Qiskit, AWS, Node.js

Skills: AGILE & Test-Driven Development, Quantum Programming, Machine Learning, HPC, CAD