

Thomas Bale

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Experience

- Demonstrator and Graduate Teacher**, University of Bristol Aug 2025 –
• Supporting 3 x year 2 computer science modules. Acting as a mentor and assisting students in workshops.
- UK HPC Student Team**, UKSCC May 2025 – Jun 2025
• Representing the UK at ISC25 SCC. Application optimisation for OpenMX and LLMs (llama).
- Machine Learning Research Assistant**, University of Bristol Feb 2025 – Aug 2025
• Developed a scalable ML workflow for generating photorealistic, emotional faces for psychological research.
- Co-Founder & Operator**, Veloworks Components Sep 2024 -
• Co-founded and operate a 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 with a strong focus on efficiency and scalability.
• Collaborated in an AGILE team, contributing in sprints, code reviews, and iterative delivery.
• Developed a scalable web application with integrated backend and 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.

Education

- University of Bristol**, BSc in Computer Science Sep 2023 – Current
• 83.5% avg; ranked top in cohort: CSA
• Founder & President UoB Quantum Society, 4 x Hackathon Wins, Ironman Switzerland, ISC SCC
- 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

Technical Projects

Quantum Cross-Chain Arbitrage - \$5000 Win

- Built a hybrid quantum-classical arbitrage bot for executing cross chain flash loans.
- By using QAOA with custom graph construction, liquidity/slippage modelling, and flash loans with Vyper.

Technologies and Skills

Languages: Python, Go, Java, C, C#, Haskell, HTML/CSS, JavaScript,

Frameworks/Tools: SQL, API/REST, Git/Github, React Native, PyTorch, TensorFlow, Qiskit, AWS, Cursor

Skills: AGILE & Test-Driven Development, Quantum Programming, Machine Learning (ML), Artificial Intelligence (AI), High performance computing (HPC), CAD, Generative AI, Computer Vision, LLM, A/B Testing, NLP, Prompt Engineering, User Research