Louis Forster

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Core Skills: Data structures, Algorithms, Object-orientation, Machine Learning, Image Processing, Computer Vision, Full-Stack Development.
Programming Languages: Python, C, JavaScript, Java, TypeScript, HTML, CSS, SQL, Haskell, C#.
Libraries & Frameworks: React, NodeJS, Flask, Scikit-learn, PyTorch, hmmlearn, Transformers, Git, Shell Scripting, Pandas, NumPy, OpenCV, Matplotlib, MySQL, Azure.

WORK EXPERIENCE

Website & Brand designer Internship **(Jul - Sept 2024)**

- Designed and created a brand profile for a professional website, increasing visitors by 119% via Google Analytics. Coordinated with client, presenting 10+ prototypes made in Adobe Illustrator and Figma.

Teaching Assistant - University of Bristol **(Sept 2023 - Present)**

- Enhanced understanding and engagement for 200+ Computer Science undergraduates in core topics including memory allocation, pointers, data structures, and linear algebra through 1:1 support and lab sessions.

Virtual Asset Trader (Self-Directed) **(Oct 2019 - Feb 2020)**

- Achieved 2,557% ROI (£800+ profit from £30 capital) via >500 virtual item trades.
- Exploited market inefficiencies by accurately valuing subjective/unpriced assets and executing strategic arbitrage and multi-item exchanges.

EDUCATION

University of Bristol - MEng Computer Science with Innovation (Penultimate) **(Graduation: Summer 2026)**

- On track for First Class Honours with CS average of 81%.
- Data Science (92%), Programming Tools (91%), Machine Learning (87%), Programming Languages Theory (84%), Linear Algebra (82%), Image Processing & Computer Vision (78%).
- Recipient of the prestigious Bristol PLUS Award for extracurricular development.

Balcarras Academy - A Levels **(2016 - 2022)**

- **Results:** Computer Science (A*), Maths (A*), Physics (A*), Extended Project Qualification (A*). Completed AS Further Maths (A).
- **Awards:** Outstanding Overall Performance Prize, Outstanding GCSE Performance Prize, Mathematics Upper School Prize, UK Bebras Elite Challenge Certificate of Distinction (Top 25%), UKMT Awards (Silver x5, Grey Kangaroo Qualifier).

PROGRAMMING PROJECTS

- **Research Knowledge Graph:** Developed a knowledge graph system using embeddings of research paper abstracts from ArXiv to discover novel connections between technical concepts. Deployed a dynamic frontend system with secure login and payment authentication. (Tech: Python, React, Flask, Embeddings, ArXiv API)
- **Valency AI:** Enhanced large-scale Language Model (LLM) evaluation by developing a transformer neural network to analyse arousal-valence metrics in chatbot data. Awarded $1000 of free Azure credits through Microsoft for Startups. (Tech: Python, LSTM, Azure, NLP, Deep Learning)
- **Personality Tracker:** Utilised transformer models RoBERTa and BART to classify events in a person's day to create a summary of their behaviour and personality traits. Implemented encryption before securely uploading data to the cloud using the Google Drive API. (Tech: Python, RoBERTa, BART, Google Drive API, Encryption)
- **Mental Health Classifier:** Developed a Python-based NLP pipeline using web scraping and sentiment analysis to identify mental health risks in social media posts. Optimised SVC models, achieving up to 96% accuracy. (Tech: Python, NLP, scikit-learn, Web Scraping)

ADDITIONAL EXPERIENCE

- Collaborated in a team of four to research and develop a venture plan for a RAG-based supply chain visualisation platform, including funding strategy, market analysis, and competitive positioning for carbon capture projects.
- Developed a strategic marketing plan to increase GCP adoption among AI/ML startups, proposing key tactics including an AI-powered assistant (MCP) and a large-scale hackathon to address founder pain points and drive user growth.