Callum Cummins

+44 7519 911129 | callumcummins28@gmail.com | GitHub | LinkedIn | Portfolio

PROFESSIONAL SUMMARY

Software Engineer with commercial experience building full-stack applications, automation systems, and AI-powered tools in production environments. Proven ability to deliver measurable impact, including reducing AML investigation time from hours to minutes through intelligent data processing and LLM integration. Strong in Python, TypeScript, and modern web frameworks, with experience designing scalable systems and user-focused solutions across frontend, backend, and AI domains.

EDUCATION

BSc Keele University**, Computer Science** Sep 2021 - July 2025
Grade: **First Class Honours**
Key Modules: Software Development Management, Advanced Databases and Applications, Communications and Networks, Computational and Artificial Intelligence
Dissertation - Gym Goer Web App: Developed a full-stack fitness tracking application with predictive ML capabilities, achieving 4.2/5 user satisfaction and 90% recommendation rate.

BTEC Coleg Cambria**, Level 3 Extended Diploma in IT** Sep 2019 - July 2021
Grade: **Merit, Merit, Distinction (MMD)**

WORK EXPERIENCE

Bet365, Manchester UK - Junior Business Systems Solutions AI Engineer Oct 2025 - Present

- Built and delivered a **Next.js/TypeScript frontend** for a global AML investigation platform used across multiple regions, consolidating fragmented data sources into a single interface and **reducing subject lookup and analysis time from several hours to ~8 minutes per case**.
- Co-developed an **LLM-powered AML reporting workflow (Python, Azure OpenAI)** that generates structured investigation reports from raw data, eliminating manual research and write-up, and **increasing analyst throughput by >10× while improving consistency across jurisdiction-specific reports**.
- Rapidly upskilled in C# to extend a legacy enterprise system, delivering an auto-generated risk assessment form that pre-populates based on Change Request component criticality, plus the supporting UI modal and RESTful CRUD endpoints.
- Automated weekly timesheet reporting in Python, replacing a previously manual process by aggregating submissions into a templated Excel workbook with dynamic pivot tables, automatically notifying non-compliant staff, and generating recurring attendance dashboards, **reducing administrative overhead and improving reporting consistency.**
- Diagnosed and resolved a production **CSV export failure** traced to a minimal Alpine container image missing **tzdata**; the absent timezone data broke Europe/London resolution and silently dropped records, fixed by adding the package to the **Dockerfile** and restoring correct BST conversion and full output.

PROJECTS

Jarvis - AI Home Assistant - Repo
Stack: Python, Microsoft Semantic Kernel, Ollama, OpenAI API, PySide6 (Qt), faster-whisper, openWakeWord, edge-tts

- Built a voice-controlled AI home assistant on **Microsoft Semantic Kernel** with a **dual-provider architecture** (local **Ollama** + cloud **OpenAI**, switchable live by voice, isolated persistent per-provider history), extended with **function-calling plugins** for browser control, Tavily web search, notes/todos, screenshots, image generation.
- Engineered a real-time voice pipeline as a **Qt state machine** (wake-word - STT - agent - TTS) using **openWakeWord / faster-whisper / edge-tts**, with a preloaded Whisper singleton removing a ~6s per-request delay and echo suppression to prevent false triggers; covered by **pytest, ruff, and mypy**.

Phishing Email Detector - Repo
Stack: Python, PyTorch, BERT, Tkinter, Pandas, OCR, Hugging Face

- Achieved **97.7% validation accuracy** (0.98 precision, 0.97 recall) on 3.7K+ samples by **fine-tuning BERT with PyTorch on CUDA GPUs**.
- Enhanced accessibility by building a Tkinter GUI with **OCR/clipboard** input, enabling real-time phishing detection for end users.

3D Globe - Repo | Live Demo
Stack: Next.js, TypeScript, Three.js, React Three Fiber, D3-Geo, Tailwind CSS, OpenAI API

- Built an interactive **globe of 190+ countries** using **Three.js/D3-Geo** with AI-generated summaries via OpenAI API, cutting lookup time to **<4s**.
- Deployed to **Vercel with Tailwind CSS/Next.js optimisations**, achieving **95+ Lighthouse scores** in accessibility, SEO, and speed.

SKILLS

- **Programming Languages:** Python, JavaScript, PHP, SQL, TypeScript and C# **(.NET)**
- **Frameworks & Libraries:** React, Next.js, Vite, Flask, Tailwind CSS, Chart.js, scikit-learn, PyTorch, Phpml, BERT, Semantic Kernel
- **Databases**: MySQL, SQL
- **Web & APIs:** RESTful APIs, AJAX, JQuery, responsive UI, full-stack development
- **Cloud & Tools:** Git, Google Cloud, Composer, Vercel, Agile/SCRUM, Microsoft Office
- **AI tools:** Azure OpenAI API, RAG systems, Vector Database
- **Research & Soft Skills:** Data evaluation, problem-solving, adaptability, teamwork, independent working, communication, cultural awareness, time management

CERTIFICATES

- Exploring Artificial Intelligence: Use Cases and Applications, AWS Training & Certification (Aug 2025)
- Getting Started with Natural Language Processing, Codecademy (Aug 2025)
- Learn Prompt Engineering, Codecademy (Aug 2025)
- Python (Basic), HackerRank (Aug 2025)

REFERENCES

Available on request