

Luke Richards

luke.codes@proton.me | 07746393845 | LinkedIn: **Luke Richards** | London

EDUCATION

UNIVERSITY OF BATH | MASTERS OF COMPUTER SCIENCE WITH PLACEMENT | FIRST-CLASS (4.0/4.0 GPA)

EXPERIENCE

THOUGHT MACHINE | BACKEND (PLATFORM) ENGINEER (GOLANG, KUBERNETES) JULY 2025 - PRESENT

- Led first integration of the internal Vault-Jobs system with the Vault-Payments batch processing platform.
- Developed and deployed scalable backend microservices in Go (Golang), with a React frontend
- Enabled resilient cross-cloud messaging using Kafka and message routing between distributed instances.
- Managed full service lifecycles on Kubernetes, including deployments and resource configurations.
- Defined robust APIs with gRPC and Protobuf, implementing event-driven service interactions via Kafka.
- Enhanced observability with Prometheus and Grafana performance dashboards.

UNIVERSITY OF BATH | RESEARCH SOFTWARE ENGINEER JUNE 2025 – JULY 2025

- Explored multiple approaches to pupillometry for Meta Project Aria using traditional computer vision and fine-tuned segmentation models on synthetic ARIA data.
- Developed and prototyped machine learning models for image segmentation using PyTorch.
- Conducted rapid software prototyping and experimentation in Python for computer vision pipelines.

IBM/AELTC | TROJAN (PYTHON, DATA SCIENCE) JUNE 2024 – JULY 2024

- Sole candidate from IBM Hursley selected for a Data-Science Placement on-site at Wimbledon 2024
- Used Python to compare and evaluate competing ML models at predicting Level 2 Tennis statistics.
- Operational support of IBM technology and Data Entry Teams, Built data pipelines for evaluation.

IBM MQ | PLACEMENT SOFTWARE ENGINEER (KUBERNETES, NODEJS) JULY 2023 – SEPT 2024

- Enabled automated reporting and resolution of machine infrastructure discrepancies by developing a highly available, containerized back-end service in Node.js for MQ Operations.
- Led a RAG Hackathon with IBM Research to share my knowledge of Retrieval-Augmented Generation LLMs with other early career professionals.

PROJECTS

MASTER'S PROJECT | EXPLORING VISUAL PERCEPTION WITH META PROJECT ARIA | OCT 2024 – MAY 2025

- Exploring social gaze distribution in naturalistic social interactions using Meta Project ARIA
- Developed end-to-end visual attention tooling using C++/Python that classifies gaze behavior, re-projects gaze into camera-space and records distribution of gaze and visual attention metrics.
- Implemented GPU-accelerated image-post processing and visualizations.
- Utilized applied machine learning working with cutting-edge experimental hardware at the intersection of Computer Science, Cognitive Science, and Psychology.

AI SAFETY | BLUEDOT IMPACT: AI SAFETY FUNDAMENTALS (NLP, ML) | OCT 2024 – FEB 2025 | REMOTE

- Rapidly developed my understanding of modern approaches to AI Alignment and safety, covering topics such as Alignment, RLHF, Constitutional AI, Mechanistic interpretability, AI-Control, Unlearning and evaluations.
- Used Python and Hugging Face to explore how context framing affects LLM robustness to disinformation.

SKILLS & TECHNOLOGIES

Languages C, C++, C#, Python, Go (Golang), JavaScript, Java, Perl

Frameworks & Libraries: PyTorch, TensorFlow, scikit-learn, Keras, OpenCV, Mediapipe, HuggingFace

Distributed Systems: REST APIs, gRPC / Protobuf, Kafka, Microservices, Message Routing

Platforms & DevOps: Kubernetes, Docker, Podman, Jenkins, AWS, Azure, IBM Cloud

Parallel & HPC: MPI, Pthreads, GPU Acceleration (CUDA, HLSL), Performance Optimization

Machine Learning & AI: Deep Learning, Reinforcement Learning (PPO, DDPG), NLP, Data Science, AI Safety

Visualization & Tools: Grafana, Prometheus, Jupyter, Unity (VR/AR), Eye-Tracking, Data Analysis