

Jacob Luke Bickerstaff

Location: Leeds, UK | Email: jacoblukebickerstaff@gmail.com GitLab: gitlab.com/jacobluke121

Personal Profile

Software engineer with 6+ years' experience building production systems across backend, cloud, and data platforms. Strong in Python, TypeScript, AWS, and system integration, with recent work spanning LLM/RAG systems, semantic search, and public-facing products. Interested in roles combining product engineering, clear user value, and technically rigorous implementation.

Experience

Software Engineer — Aire Logic

Oct 2021 – Present

- Designed and delivered large-scale NHS data pipelines on AWS and Databricks, processing 500M+ records per cycle.
- Built API-based data ingestion and governance systems (Python, DynamoDB, S3, Lambda)
- Modernised legacy systems to improve performance, maintainability, and auditability
- Built internal tooling and mentored junior engineers across architecture and delivery

Key Project Highlights

- **Vaccination Data Platform** — Delivered ETL pipelines and API sync services supporting vaccine systems across NHS England
- **PLICS Migration** — Redesigned SAP pipelines into Databricks, significantly improving performance and scalability
- **RAG Chatbot** — Built internal RAG-style chatbot using LangChain and OpenAI for semantic retrieval over company documentation.

Software Developer — Leeds Building Society

Oct 2019 – Aug 2021

Developed mortgage systems integrating legacy and modern database schemas (Oracle PL/SQL)

Delivered data mapping and reporting solutions for regulatory systems

Selected Portfolio Projects

TracePilot — Go, Python, LangGraph

AI-assisted incident-triage system using a Go API service and Python LangGraph worker to investigate failed software/data workflows, retrieve evidence, rank probable causes, and produce structured incident reports.

Deterministic Document Resolution — Python, FastAPI, NLP, pytest

Document-analysis system for resolving acronyms, defined terms, and structural references in complex documents, designed as deterministic grounding infrastructure for auditable LLM/RAG workflows.

PocketBank — Go, PostgreSQL, REST APIs, domain modelling

Go backend project modelling banking operations, account flows, service/store boundaries, PostgreSQL persistence, transaction records, ledger-style accounting, and idempotency-aware writes.

Clarity on Tax — clarityontax.co.uk — Next.js, TypeScript, Tailwind, React, Cloudflare

Public UK tax tool built with Next.js and TypeScript, explaining how the April 2029 pension cap may affect individuals, with dividend tax and salary-versus-dividends calculators.

LangGraph Recipe Planner — Python, LangGraph, pytest, stateful workflows

Agent-orchestration experiment using explicit state, conditional routing, validation nodes, retry/abstention paths, and deterministic checks around LLM output.

Technical Knowledge

Languages: Python | TypeScript | Go | SQL/PLSQL

AI/LLM: RAG pipelines | semantic search | vector embeddings | LangChain | LangGraph

Backend/Data: FastAPI | AWS Lambda/S3/DynamoDB | Databricks | PostgreSQL | ETL

Frontend/Product: React | Next.js | Tailwind | Cloudflare Pages

Practices: CI/CD | testing | system design | mentoring | domain modelling

Education

BSc Computer Science – University of Leeds | First-Class Honours