

RAMANDEEP SINGH

m.singh.raman@gmail.com | +44 7733845679 | [linkedin.com/in/rsingh-tech](https://www.linkedin.com/in/rsingh-tech) | github.com/Ramandeep-AI
United Kingdom | full UK driving licence | ramandeepsingh.co.uk | live demo at youtu.be/b-rTquYopj0

PROFESSIONAL SUMMARY

Applied AI engineer who designs, ships and evaluates machine-learning systems end to end, from data pipelines and model development through to authenticated APIs, cloud deployment and live monitoring. Recent work spans a production monitoring platform running on AWS and an LLM decision-support application with multimodal input and human-in-the-loop review. I published an article in Towards Data Science on honest model evaluation, and I have manufacturing-industry experience at Jaguar Land Rover, including training shop-floor colleagues on digital record-keeping. I build systems that the people relying on them can inspect, question and trust.

TECHNICAL SKILLS

Machine Learning: Python, scikit-learn (Random Forest, SVM, KNN, ANN), TensorFlow/Keras, feature engineering, anomaly and pattern detection, data-driven decision logic

Model Evaluation & Integrity: data-leakage detection, grouped cross-validation, label auditing against ground truth, event-level metrics, held-out behavioural testing, SHAP explainability analysis, documented model limitations and trade-offs

Software Engineering: FastAPI, Pydantic, REST and OpenAPI design, Node.js, PostgreSQL, SQLAlchemy 2.0, Alembic migrations, pytest and Jest (50 automated tests across three public repositories), API-key authentication, secure-by-default design

MLOps & Deployment: AWS (EC2, RDS, IAM, security groups), Docker and Docker Compose, GitHub Actions CI/CD, Linux, containerised deployment, real-time CPU and edge inference, live model monitoring and alerting

GenAI & LLM Applications: LLM-integrated application development (Anthropic Claude Agent SDK), prompt design, structured JSON outputs, streaming responses, multimodal inputs (text and screenshots), human-in-the-loop review workflows

Data Pipelines & Dashboards: secure streaming-data ingestion, ETL, SQL analytics, NumPy, Pandas, Streamlit and Plotly decision-support dashboards, automated reporting; OpenCV and MediaPipe computer vision for graphical data

Knowledge Transfer: technical writing for mixed audiences, workplace training on digital record-keeping systems, stakeholder support for non-technical users

PROJECTS

FallWatch, Secure Data & Monitoring Platform

2026

github.com/Ramandeep-AI/fallwatch-platform | deployed on AWS | [55-second live demo](#)

- Designed and deployed a secure end-to-end data platform, with real-time events ingested over the network into a PostgreSQL database via an authenticated FastAPI service and surfaced through a live analytics dashboard with automated alerting (AWS EC2, RDS, Docker).
- Deployed with Docker Compose and GitHub Actions CI (23 automated tests on every push). Hardened after a security review with API-key authentication, input escaping and network isolation. Data architecture built on SQLAlchemy with Alembic migrations.
- Built a live Streamlit and Plotly dashboard for real-time monitoring, drill-down and status acknowledgement, a practical human-review workflow in which every automated alert is confirmed or dismissed by a person and response times are measured.
- Extended with a mobile companion app (React Native, Expo, TypeScript, [fallwatch-mobile](#)) that delivers push notifications and one-tap acknowledgement, verified on real hardware.

Claude Agent SDK | Node.js | local-first application

- Built a full-stack GenAI application that analyses freelance job postings and drafts tailored proposals, built as a Node.js server integrating Anthropic's Claude Agent SDK with streaming responses, restricted tool permissions and structured JSON outputs.
- Multimodal by design, accepting pasted text and screenshots, with the agent reading images through a sandboxed read-only file tool and prompt logic kept as a versioned module.
- Human-in-the-loop throughout, with jobs flagged APPLY, CAUTION or AVOID with reasons against user-defined rules, and every AI draft reviewed and edited before use.

Trustworthy Evaluation of a Real-Time ML System**2024 to present**github.com/Ramandeep-AI/ai-fall-detection-prototype | CPU and edge inference

- **Identified and eliminated evaluation data leakage in my own published results.** A reported 94.3% accuracy collapsed to an honest 69.1% once the test set no longer shared recordings with training. I published the correction rather than the flattering number.
- Audited the labels as well as the split, rebuilt the dataset from frame-level ground truth, and replaced the headline metric with event-level measures that reflect what a user actually experiences, meaning detection rate, alarm latency and false-alarm rate.
- Ship two models with a documented sensitivity trade-off plus a held-out behavioural test for the failure mode that matters most; audited feature attributions with SHAP. 13 unit tests in CI, MIT licensed, full architecture documentation.

PROFESSIONAL EXPERIENCE

Freelance AI & Software Consultant, self-employed**May 2024 to present**for Science Behind Hairdressing, sciencebehindhair.co.uk | live site, three releases

- Designed, built and deployed a responsive React website for a live client, then evolved it across three releases as the business model changed, from a services showcase with Fresha booking, to a paid masterclass with Stripe Checkout, to a full education platform.
- Gathered requirements from a non-technical stakeholder, integrated third-party payment and booking flows (Stripe, Fresha, Kajabi), and delivered rapid incremental releases against operational feedback.
- Supported the client through each platform change, explaining unfamiliar systems in depth until she could run them confidently herself.

Quality Inspector, Jaguar Land Rover, Birmingham**Jun 2022 to Aug 2023**

- Worked within a high-precision, high-pressure manufacturing environment governed by strict process adherence, analysing defect patterns and feeding structured findings back into continuous improvement of quality-reporting processes.
- Trained new colleagues as work started at additional sites, covering both inspection technique and correct use of the company's internal system for recording defective parts and keeping records current in real time, practical digital knowledge transfer on the shop floor.

COMMUNICATION & KNOWLEDGE SHARING

- Named contributor to "[Essential Computer Vision Resources](#)", a practical guide published by the MLOps Community (47,000+ followers), credited alongside the Head of Platform Engineering at Visia.
- Published "[Building a Real-Time Fall Detection System on CPU](#)" in Artificial Intelligence in Plain English (39K+ follower publication). A second article, "[My Fall-Detection Model Scored 94%, and It Was Lying to Me](#)", is published in Towards Data Science.
- Wrote full architecture documentation for three public repositories and produced an end-to-end demonstration video of the deployed system.

EDUCATION

MSc Advanced Computer Science (Merit), Birmingham City University**Jan 2021 to Jan 2022**

Specialisms in Advanced Data Science, Advanced Databases and Machine Learning. Dissertation on pre-impact fall detection using wearable accelerometer data.