

Akshay Vijay Panchal

Lead AI Engineer | Machine Learning Engineer

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Stamp 1G authorised to work in Ireland

PROFESSIONAL SUMMARY

Lead AI Engineer with 5.5 years of hands-on experience building and deploying ML models and production AI systems on AWS, Linux and containers. Leads a team of 12 at Baseel, owns its AI architecture across agentic systems, RAG pipelines and core ML work, and created the Cypra AI product line, including the flagship CypraWall AI firewall. Writes clean Python services and ships GenAI systems against real enterprise data. Founder of Tuathra, an AI engineering studio. Published in an Elsevier journal, 2:1 MSc in Data Science and Analytics from MTU, McKinsey Forward Fellow.

TECHNICAL SKILLS

Languages: Python (primary), R (working knowledge), SQL, JavaScript, Bash

AI and ML Frameworks: PyTorch, TensorFlow, scikit-learn, XGBoost, Prophet, Stable-Baselines3 (RL), HuggingFace Transformers, YOLOv8

LLM and Agentic AI: LangChain, LangGraph, CrewAI, LlamaIndex, OpenAI API, Anthropic Claude API, OpenRouter, Ollama, PydanticAI

RAG and Retrieval: Qdrant, FAISS, hybrid search, semantic reranking, contextual assembly, embedding pipelines, vector database design

Prompt Engineering: Few-shot and chain-of-thought prompting, context window management, output validation

Backend and APIs: Django REST Framework, FastAPI (async and streaming), PostgreSQL, Apache Kafka, event-driven architecture, RESTful API design, microservices

MLOps and Data: MLflow, Apache Airflow, Feast feature store, model lifecycle management, experiment tracking, CI/CD, regression testing, evaluation frameworks

Cloud and Infrastructure: AWS (Lambda, S3, SageMaker, EC2), Azure AI Services, Docker, Kubernetes (AKS-compatible), GitLab CI/CD, n8n workflow automation

AI Tooling: Claude Code, Cursor Pro, GitHub Copilot, Model Context Protocol (MCP), AI specification-driven development

Security and Governance: GDPR-compliant AI architecture, PII handling, prompt injection defences, input and output validation, EU AI Act awareness, audit trail design

Software Engineering: Git, agile delivery, code reviews, test-driven development, system design

PROFESSIONAL EXPERIENCE

Lead AI Engineer

Aug 2025 - Present

Baseel Partners | Remote, London UK

- Lead a cross-functional team of 12 engineers and own all AI architecture at Baseel, from agentic systems and RAG pipelines to core AI/ML work.
- Lead architecture and delivery of a six-module enterprise AI SaaS platform (GrowthOS, AuthorityAI, IntentPulse, ConversionAI, CampaignPilot, InsightFabric) across a cross-functional team of eight engineers, designers, and domain validators.
- Design and build the full Python backend stack: Django REST Framework, PostgreSQL, FastAPI inference services, Apache Airflow orchestration, Feast feature store, and Kubernetes on AWS, all GDPR and EU AI Act compliant.
- Build LLM-powered agentic AI systems using LangChain, LangGraph, and CrewAI with stateful memory, planning loops, tool use, and human-in-the-loop controls, connected to live enterprise data through secure API connectors (Google Ads API, Search Console, GA4, Keyword Planner). A CrewAI orchestration pipeline improved throughput by 30 percent in production.
- Develop and deploy machine learning models including XGBoost classification, Prophet time-series forecasting, and Stable-Baselines3 reinforcement learning. Manage full model lifecycle with MLflow experiment tracking, evaluation frameworks, and production monitoring.
- Built and deployed a production RAG pipeline (LangChain, OpenAI, Qdrant) for enterprise document intelligence with hybrid retrieval, semantic reranking, and contextual assembly. Achieved a 30 percent improvement in automation accuracy.
- Deployed Clinident healthcare AI modules to production via Docker and AWS, including a deep learning wound image classification model built with PyTorch CNNs and transfer learning, reaching 87 percent accuracy on a held-out clinical dataset.
- Designed and implemented AI guardrails throughout production systems: prompt injection defences, input and output validation, PII-safe data handling, and monitoring and alerting for deployed models.

- Mentor junior and mid-level engineers on ML best practices, production engineering standards, and responsible AI design. Run sprint planning, contribute to technical roadmaps, and communicate technical direction to senior business stakeholders.

Founder, AI Engineering Studio

2026 - Present

Tuathra | tuathra.com

- Founded an independent AI engineering studio that builds production AI systems for enterprise clients and develops its own products, LexAI and AI SRE.

McKinsey Forward Fellow

Oct 2025 - Dec 2025

McKinsey and Company | Cork, Ireland

- Competitively selected for McKinsey's global Forward Program. Practised structured problem-solving and presenting complex technical findings to senior non-technical audiences.

Freelance Senior AI and ML Engineer

2022 - Present

Freelancer.com | Remote

- Designed and delivered fifteen-plus production AI and ML solutions for enterprise and SME clients across property management, healthcare, and financial services. Full lifecycle ownership from requirements and architecture through to cloud deployment and post-delivery optimisation.
- Built containerised ML APIs (FastAPI, Docker, Kubernetes, AWS Lambda, S3, SageMaker) achieving a 25 percent compute cost reduction. Deployed a credit risk ML model (scikit-learn, AUC-ROC 0.84) driving a 15 percent improvement in client engagement for a financial services client.
- Built a zero-intervention autonomous batch processing pipeline for a property management client using n8n, Google Apps Script, and OAuth 2.0, removing over 40 hours per week of manual operations and integrating with the client's enterprise scheduling and inventory systems.
- Engineered an LLM content generation pipeline (Ollama, Mistral 7B) with topic-lock injection, artifact-stripping, and output validation, deployed across multiple client verticals at production scale.

Business Analyst, Credit Risk and Analytics

Apr 2023 - May 2024

YBI Foundation | Remote

- Automated Python and SQL data pipelines for financial analytics, achieving an 18 percent improvement in retention metrics. Built a scikit-learn churn prediction model and Power BI ML risk scoring dashboard, producing a 15 percent engagement uplift.

KEY PROJECTS

- **Cypra AI Product Line, Baseel (creator):** Created the full line of Cypra AI products. CypraWall is the flagship AI firewall. CypraFiles is a RAG-based document agent that serves as the reasoning core for document-heavy workflows. CypraDB lets users query unstructured databases and text in plain language and is integrated into several other Baseel tools. CypraEdge is a growth platform. CypraScribe is an AI writing and paraphrasing assistant.
- **LexAI, Legal AI Platform for Irish and UK law firms (solo build, Tuathra):** Legal document intelligence platform with stateful agentic Q&A, RAG over sensitive documents, semantic reranking, classification, and summarisation. Django 5, PostgreSQL, Qdrant, LangGraph, Next.js 14, Docling. LLM routing across Anthropic Claude and Ollama with PII-safe architecture, prompt injection defences, and output safety filters.
- **AI SRE, self-healing reliability agent (Tuathra):** Multi-agent operator that watches telemetry, groups anomalies into incidents, and proposes the smallest safe fix inside an allow-list, with dry runs and rollback.
- **Clearway Companion, Elsevier Published:** AI-powered assistive wearable device using YOLOv8 object detection, ultrasonic sensor fusion, and real-time audio feedback for visually impaired users. Published in the Journal of Systems Engineering and Electronics (Elsevier), April 2024.

EDUCATION

MSc in Data Science and Analytics (2:1)

2024 - 2025

Munster Technological University (MTU) | Cork, Ireland

BE in Artificial Intelligence and Data Science (CGPI 8.34/10)

2020 - 2024

University of Mumbai | Mumbai, India

CERTIFICATIONS

- PL-300: Microsoft Power BI Data Analyst Certified
- Machine Learning on Google Cloud Specialisation, Google