

Deepraj Chouhan

AI Systems Engineer | LLM Applications, RAG, Agentic Workflows & Secure AI Systems

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PROFESSIONAL SUMMARY

AI Systems Engineer with 6+ years of software engineering experience building production backend systems, full-stack products, secure cloud platforms, and AI-powered workflow automation. Hands-on experience with LLM applications, RAG pipelines, semantic search, vector databases, AI orchestration, evaluation workflows, observability, and secure deployment patterns. Strong fit for UK AI Engineer, LLM Engineer, Applied AI Engineer, RAG Engineer, and AI Platform roles requiring Python, FastAPI, OpenAI APIs, PostgreSQL, Redis, Docker, cloud infrastructure, and product-minded engineering delivery.

CORE AI SYSTEMS EXPERTISE

- Built production-grade LLM workflows using RAG, semantic retrieval, embeddings, vector databases, prompt engineering, and AI orchestration frameworks.
- Designed AI workflow automation systems integrating OpenAI APIs, async Python services, external APIs, backend task execution, and cloud-native infrastructure.
- Implemented evaluation and observability patterns including response scoring, retry analysis, tracing, token usage analytics, workflow monitoring, and prompt reliability checks.
- Developed security controls for AI systems including PII masking, prompt-injection safeguards, encrypted credential handling, audit logging, access controls, and protected data workflows.
- Strong engineering foundation across API design, distributed backend services, system design, CI/CD, monitoring, secure deployment, and stakeholder-facing product delivery.

PROFESSIONAL EXPERIENCE

Software Engineer | T1 Tech Dubai | Dubai, UAE *Nov 2024 - Present*

- Built LLM-assisted workflow automation features using Python, backend APIs, and AI service integrations to streamline sales operations and user-facing processes.
- Integrated AI-powered assistance into full-stack applications, connecting React and TypeScript interfaces with .NET services, SQL Server, and Python automation pipelines.
- Designed backend workflows for AI-assisted task execution, including prompt-based automation, data retrieval, response handling, operational monitoring, and scalable service integration.
- Improved product scalability and system capacity by 50% through architecture redesign, backend optimization, and more reliable service integration.
- Enhanced operational performance by 40% through AI-assisted sales automation, workflow streamlining, and user experience improvements.

Software Engineer | Seven Islands Shipping Limited | Mumbai, India *Feb 2023 - Aug 2023*

- Redesigned product architecture to support scalable automation, data processing, and AI-assisted workflow enhancements, improving system efficiency by 30%.
- Implemented AI-assisted sales and user experience features, including automation logic and data-driven personalization workflows, contributing to a 40% improvement in engagement and operational efficiency.
- Built Python-based data extraction pipelines to collect and structure external website data for analytics, workflow automation, and business decision support.
- Developed scalable React and TypeScript applications and launched a cross-platform mobile app to expand access across Android and iOS.
- Led a four-person engineering team, coordinating with product and design stakeholders to translate business needs into scalable software and automation features.

System Engineer | Tata Consultancy Services | Mumbai, India *Feb 2021 - Jan 2023*

- Built enterprise security experience through SAP CRM access control, compliance validation, application security testing, production monitoring, and auditability workflows.
- Conducted SAP CRM security reviews and quarterly user access validations, strengthening understanding of identity, permissions, governance, and secure system operation.
- Performed grey-box application testing using SAP Debugger to identify security weaknesses and improve enterprise system resilience.
- Contributed to SAP CRM migration to Oracle Cloud, gaining hands-on experience with cloud migration planning, production deployment, and system continuity.
- Developed security-first engineering practices now applied to secure AI systems, including access control, monitoring, audit logging, and protected data workflows.

Part-time Full-Stack Engineer | Fireblaze Technologies Pvt Ltd | Nagpur, India *Jan 2019 - Jan 2021*

- Built the full-stack foundation for Ignite, an e-learning platform focused on user engagement, platform functionality, and scalable product delivery.
- Optimized web platforms for performance, security, usability, and engagement while collaborating with founders, design, and marketing teams.
- Applied data-informed decision-making by analysing user behaviour patterns to support marketing campaigns and improve digital workflows.

SELECTED AI & ENGINEERING PROJECTS

Apply Forge Pro - AI Workflow Intelligence Platform

- Built an AI workflow platform automating job discovery, application personalization, tracking, and recruiter outreach.
- Developed RAG-based personalization using embeddings, semantic retrieval, contextual candidate memory, and vector search.
- Implemented AI evaluation and observability with response scoring, retry analysis, token tracking, workflow monitoring, and prompt reliability checks.
- Added secure AI controls including PII masking, prompt-injection safeguards, audit logging, encrypted credentials, and access-controlled workflows.

Traffic Segregation Using Machine Learning on CICIDS2017 Dataset

- Applied supervised and unsupervised machine learning techniques using Python and R to classify network traffic and differentiate attack patterns from normal behaviour.
- Evaluated model performance in controlled virtual machine environments and produced analysis for security monitoring use cases.

Practical Implementation and Testing of Spectre Attack

- Created and tested a proof of concept for Spectre vulnerabilities CVE-2017-5753 and CVE-2017-5715, documenting exploit behaviour, impact, and mitigation approaches.

TECHNICAL SKILLS

AI / LLM Engineering	LLM applications, RAG, OpenAI APIs, semantic search, embeddings, cosine search, vector databases, prompt engineering, AI workflow automation, evaluation, observability
AI Frameworks & ML	LangChain, LangGraph, Hugging Face, PyTorch, Scikit-learn, MLflow, Pandas, NumPy
Backend & APIs	Python, FastAPI, Django, Node.js, Express.js, Spring Boot, REST APIs, GraphQL, WebSockets, async Python
Frontend & Product Engineering	TypeScript, JavaScript, React, responsive UI, UX-focused product delivery
Cloud, Data & Infrastructure	AWS, Docker, Redis, CI/CD, PostgreSQL, MySQL, MongoDB, Firebase, Pinecone, Qdrant, S3
Security & Privacy	PII masking, prompt-injection safeguards, access control, audit logging, encrypted credentials, cybersecurity, GDPR-aware data handling

EDUCATION & RESEARCH

- MSc Applied Cyber Security - University of South Wales, UK (Sept 2023 - Sept 2024)
- BE Information Technology - SB Jain Institute of Technology, India (Aug 2016 - Aug 2020)
- Ongoing research: Embedding Encrypted Consent Data in Medical Images Using Advanced Steganography and Cryptography - AES-256, Pixel Value Differencing, robustness testing, and healthcare privacy compliance.