Sparsh Verma

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Summary

I am an AI/ML Engineer with 2+ years of experience designing, building, and productionizing scalable ML systems for real-time decisioning, personalisation, and predictive modelling. I hold a Master's in Artificial Intelligence with deep expertise in reinforcement learning, deep learning, agentic AI, and end-to-end MLOps. Proven ability to translate research concepts into reliable, business-critical ML products, balancing exploration vs. exploitation, performance, and explainability. Strong software engineering foundation with cloud-native deployment, CI/CD, and system ownership.

Education

Master of Science - Artificial Intelligence	**Queen Mary University of London**	09/2022 - 09/2023
Bachelor of Technology - Computer Science with specialisation in Cyber Security & Digital Forensics	**Vellore Institute of Technology**	07/2018 - 07/2022

Projects

- **Cyber.AI**: Designed reinforcement-learning-based agents for automated exploit detection and execution. Built end-to-end ML pipelines to analyse large-scale security datasets and extract actionable patterns. Focused on **data quality, validation, and interpretability**.
- **Sovereign Layer1 Blockchain:** The project is a custom Layer 1 blockchain built from first principles in TypeScript. It is designed to solve three critical infrastructure problems Stablecoins, Real-world assets and Decentralised physical infrastructure support (DePIN). Unlike general-purpose chains (like Ethereum), where compliance is a "wrapper", this chain enforces it at the state machine level.
- **HyVuln**: Built a high-throughput ML-powered scanning engine processing 10,000+ vulnerability patterns. Achieved 92% detection accuracy using optimised pattern-matching and ML techniques.
- **Max**: Developed a Python-based AI voice assistant integrating speech, text, and contextual intent. Focused on accessibility and human-centric interaction design.
- **RedI(Intelligent Eye):** RedI is a comprehensive visual AI web application that leverages cutting-edge on-device machine learning to provide real-time visual intelligence capabilities. Built with privacy as the foundation, all AI processing happens directly on your device.
- **Morse Code Detector**: Built a deep learning model to detect and classify temporal signal patterns. Worked with time-series data, noise handling, and performance evaluation metrics. Designed a CNN-based temporal signal classifier.
- **Agentic AI (Projects / In Progress)**: Designed stateful, multi-step AI workflows using LangGraph and LLM-based agents. Integrated tool calling, vector-based retrieval (RAG), and human-in-the-loop safety controls. Optimised agent trajectory quality, latency, and hallucination mitigation.

Work History

Data Administrator	**Fullers Smith and Turner**	03/2024 - 12/2025

- Designed and productionized AI-driven Python microservices supporting large-scale, data-intensive operational workflows.
- Built end-to-end ML pipelines including data ingestion, feature processing, model integration, deployment, and monitoring.
- Owned ML-enabled systems from problem framing to production, ensuring scalability, reliability, and measurable business impact.
- Implemented automated data validation, regression testing, and CI/CD pipelines, improving deployment confidence and system stability.
- Developed real-time analytics dashboards exposing KPIs, system health, and performance metrics for stakeholders.
- Integrated monitoring and alerting to detect model drift, data quality issues, and performance degradation.
- Partnered cross-functionally to translate business priorities into ML-driven decisioning solutions.

Summer Intern(App Development)	**MP Police**	05/2020 - 07/2020

- Worked on a security-critical production application supporting real-world public-sector deployment.
- Redesigned geofencing and location intelligence algorithms, improving accuracy by 86%.
- Reduced false alerts by 60% through enhanced validation, error handling, and system tuning.
- Gained early exposure to reliability engineering, failure handling, and correctness in high-impact systems.

Android App Developer	**DeepStory (India)**	06/2022 - 09/2022

- Contributed to end-to-end development of cloud-integrated, ML-driven applications supporting production deployment.
- Worked with Python and Java backend services and AWS-hosted databases to improve data reliability, latency, and scalability.
- Optimised reinforcement learning models, improving prediction accuracy by approximately 20% through architecture tuning and performance analysis.
- Participated in code reviews, refactoring, and performance optimisation to improve maintainability and production readiness.

Skills

• **GenAI & Agentic AI:** Large Language Models (LLMs) • LangChain • LangGraph • RAG • Prompt Engineering • Hallucination Mitigation • RAG • LangChain

• **ML & NLP:** Machine Learning Piplines • Deep Learning • NLP • NLU • Reinforcement Learning • Model Validation

• **Databases & Tools:** MySQL • Linux • REST APIs • Git • Performance Monitoring • TensoRT • Azure • API Integration

• **MLOps & Engineering:** Kubernetes • AWS • CI/CD pipelines • Model Deployment • Pipeline Optimisation • CNNs

• **Big Data & ETL:** Hadoop • Spark • Kafka • Data Processing Automation • KPI Reporting • Azure

• **Business Intelligence:** Power BI • Tableau • BigQuery • KPI Analytics • Reporting Automation • Credit Analysis

• **Programming:** Python • Java • C/C++ • SQL • JSON • Kotlin • Object-Oriented Design • TypeScript

• **Professional Strengths:** Stakeholder Communication • Business Storytelling • Product Analytics • Cross-functional Collaboration • Data Governance • Agile / SDLC Practices

Certificates

Links to all the certificates are available on my [LinkedIn](#) profile.

- **Kubernetes Certified Application Developer**
- **JPMorgan Chase & Co. Quantitative Research**
- **Data Science in Real-world Projects**
- **Google Data Analyst Certificate**
- **Google Business Intelligence Certificate**
- **Software Developer Mastery, Antipatterns**
- **Goldman Sachs Software Engineering Job Simulation**
- **Project Management Certification**
- **Accenture Data Analytics and Visualisation**
- **Generative AI Bootcamp**
- **Tata GenAI Powered Data Analytics**