Dhruv Verma

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Education

San Jose State University — San Jose, CA
Master of Science in Software Engineering — *Aug 2025 – Jun 2027 (Expected)*
- **Focus Areas**: Distributed Systems, Enterprise Architecture, Quality Engineering, and Data Mining.

Dr. A.P.J. Abdul Kalam Technical University — Lucknow, India
Bachelor of Technology in Computer Science and Engineering — *Jun 2011 – Jul 2015*

Technical Skills

Languages: Java, C/C++, Python, SQL, JavaScript, HTML, CSS
Frameworks: Spring Boot, Django, Flask, React, Node.js
Databases: MySQL, PostgreSQL, MongoDB, Redis, NoSQL
Tools & Cloud: Docker, Jenkins, Git, Terraform, AWS (EC2, S3, RDS), OpenTelemetry, Tableau
AI Libraries & Agentic Tools: LangChain, OpenAI APIs, GPTs, Vector Databases

Experience

Senior Software Engineer — Sep 2021 – Aug 2025
Better Mortgage — *India*
- Designed and scaled **Tinman**, Better's core loan origination platform, by developing high-throughput microservices in Java and Python that reduced API latency by **20%**.
- Engineered robust RESTful APIs and workflow automation using Java Spring Boot and PostgreSQL for complex financial computations (including DTI and APR), ensuring seamless integration across partner and compliance systems.
- Built automated data validation pipelines in Python and SQL to detect underwriting anomalies, reducing manual compliance review time by **15%** and ensuring high data integrity.
- Collaborated with infrastructure and backend teams to optimize services on AWS, ensuring **high availability**, system reliability, and scalable architecture across the platform.

Software Engineer — Aug 2019 – Sep 2021
XL Dynamics India Private Limited — *India*
- Refactored a legacy mortgage servicing system into a modular Java Spring Boot architecture, optimizing PostgreSQL database queries to improve performance by **18%**.
- Automated document validation and regulatory checks by writing backend automation scripts in Python, increasing compliance processing speed.
- Streamlined the internal compliance portal using HTML and JavaScript, reducing loan processing turnaround time by **20%** for operational teams.

Prior Experience — Mar 2015 – Jun 2019
Khurana & Khurana IP Law (Business Analyst) | XL Dynamics (Analyst)
- **Business Analyst**: Conducted technical due diligence on codebases and translated system architectures for IP strategy.
- **Analyst**: Developed backend compliance services and automated system testing using JUnit and Postman.

Projects

ALRO – Autonomous Logistics & Routing Optimizer | *Python, FastAPI, PostgreSQL, Docker, LLMs* — 2025
- Engineered routing simulation tools and a real-time operator dashboard to validate dispatch accuracy and expose the LLM's step-by-step decision reasoning, ensuring robust **system observability**.
- Leverages a dual-agent system to address gaps in cost-maximizing routing algorithms by evaluating qualitative weights such as driver zone familiarity, cargo load limits, fragile cargo compatibility, and driver fairness rates.
- Resolves routing decisions through convergence, override, and qualification scenarios, enabling the LLM agent to validate, modify, or flag algorithmic routes based on business policies and stream live verdicts to the UI.
- View source on GitHub or run the Live Demo.

AI-Agent Based Observability Tool | *Python, FastAPI, OpenTelemetry, LangChain, GPT APIs* — 2025
- Designed an **autonomous observability framework** using Python, FastAPI, and OpenTelemetry, enabling continuous monitoring of distributed system process flows.
- Built an incident-response agent leveraging LangChain and GPT APIs to correlate alerts, analyze telemetry data, and suggest or execute first-line remediation.
- Reduced mean time to resolution (**MTTR**) by automating triage, incident prioritization, and root-cause mapping across microservices.