Manya Jain

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Portfolio Website

Education

- **Arizona State University**, Tempe, AZ
  MS in Computer Science — Aug 2025 – Present
- **Manipal University Jaipur**, India
  BTech in Computer Science — Aug 2021 – May 2025

Skills

Programming Languages: C, C++, Java, Go, Python, SQL, Bash
Backend Engineering: RESTful APIs, microservices, request lifecycles, service contracts, error handling, concurrency fundamentals
Platform & Systems: Linux, Unix utilities, process management, memory basics, debugging, logging, system call awareness
Distributed Systems: service decomposition, fault isolation, scalability concepts, latency-aware design
Networking Fundamentals: TCP/IP, DNS, HTTP/HTTPS, routing concepts, service discovery
Cloud & DevOps: Docker, Kubernetes (K3s/K3d), Jenkins CI/CD, container orchestration, environment reproducibility
Data & Storage: PostgreSQL, MySQL, Redis, Neo4j; schema design, indexing, query optimization
Automation & Testing: unit testing, regression testing, configuration validation, build verification scripts
ML-Backed Systems Exposure: inference pipelines, evaluation workflows, backend integration, performance tradeoffs

Experience

- **National Institute of Urban Affairs (Govt. of India)** — New Delhi, India
  Software Engineer Intern – DevOps & Platforms — Aug 2024 – May 2025
  - Designed and operated backend services with emphasis on reliability, observability, and failure recovery using Docker and Kubernetes to support distributed services and analytics workloads.
  - Built Jenkins CI/CD pipelines to validate builds, configurations, and service dependencies, ensuring reproducible deployments across environments.
  - Developed pre-deployment validation utilities to verify database connectivity, cache readiness, secrets, and environment variables before runtime.
  - Investigated service failures including container crashes, database timeouts, and misconfigurations by correlating logs and system signals.
  - Improved deployment reliability and onboarding speed by authoring runbooks, checklists, and standardized operational documentation.
- **Smart Cities Mission (MoHUA, Govt. of India)** — New Delhi, India
  Software & Data Analytics Intern — Dec 2023 – Feb 2024
  - Built backend data pipelines and SQL-backed services to process large, heterogeneous datasets across 100+ cities.
  - Designed validation logic and KPI frameworks to ensure data consistency under noisy and incomplete real-world inputs.
  - Translated ambiguous stakeholder requirements into structured queries, metrics, and reproducible analytical workflows.
  - Performed exploratory analysis to identify performance bottlenecks, data quality issues, and systemic inconsistencies.
- **Siemens Healthineers** — Cyber City, Delhi, India
  Summer Intern – Software & Digital Inspections — May 2023 – Jul 2023
  - Standardized backend data capture and reporting workflows to improve reliability of inspection and audit systems.
  - Implemented structured validation rules to reduce inconsistent inputs and downstream reporting errors.
  - Supported defect triage by reproducing bugs, isolating root causes, and validating fixes with engineering teams.

Projects

- **HireMate Conversational AI Platform:**
  Built a backend-heavy retrieval-augmented system using embeddings and Neo4j, focusing on service orchestration, semantic retrieval, ranking logic, and API-driven inference workflows. Evaluated failure modes, latency tradeoffs, and system consistency under varied query loads.
- **UPYOG Cloud Platform:**
  Developed a containerized multi-service backend with CI/CD automation, deployment validation, and environment reproducibility. Emphasized platform stability, rollback safety, and service-level reliability.
- **ICCC Smart Cities Portal Deployment:**
  Stabilized a production PHP–MySQL backend by optimizing queries, hardening APIs, and improving runtime reliability for real-time dashboards.
- **Feature Selection using Gravitational Search Optimization:**
  Implemented and evaluated optimization algorithms on high-dimensional datasets, analyzing computational cost, convergence behavior, and accuracy tradeoffs.

Research

- **Author:** *Analysis and Mathematical Models of AI and Its Legal Boundaries*
  - Conducted a mathematical and systems-oriented analysis of bias, fairness, interpretability, and accountability in AI-driven decision systems. Examined implications for deploying AI in large-scale, production software platforms.
  - Studied evaluation and governance considerations relevant to integrating AI components into enterprise backend systems.