Manav Ranawat

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Education

University of California-San Diego Aug. 2024 – June 2026

Masters in Computer Science | Specialization: Artificial Intelligence *GPA: 4/4*

- Coursework – Machine Learning, NLP, Advanced Algorithms, Networked Services, Probabilistic Models

Sardar Patel Institute of Technology Aug. 2018 – May 2022

Bachelor of Technology in Information Technology *CGPA: 9.66/10*

- Coursework – Software Engineering, Data Structures, Algorithms, Database Management, Object Oriented Programming, Big Data & Analysis, Operating System
- Finalist at **JP Morgan Chase's** Code for Good (2019 & 2020), building software solutions for non-profits.
- Won the **Best Project** and **Best Research Paper** awards in our department, along with the **Best Innovative Project** award from an education startup "Aas Vidhyalaya" from over 100+ projects.

Skills

Programming: Python, Java, Scala, C/C++, HTML, CSS, JavaScript, PHP, R, Typescript
Frameworks: Flask, Django, Spring Boot, Angular, ReactJS, NodeJS, FastAPI, Hadoop, Docker, Git, Jira, Linux
Data Tools: Apache Spark, Pandas, NumPy, Scikit-learn, Airflow
Database: MySQL, SQLite, Oracle, Snowflake, MongoDB, Firebase, PostgreSQL
Soft Skills: Communication skills, Structured problem-solving, Conflict resolution, Critical thinking, Teamwork

Experience

Morgan Stanley

Software Engineer II *Aug.* 2022 – *Aug.* 2024

- Migrated a legacy microservice to **Azure**, containerized it using **Docker** and solved performance bottlenecks by added **multithreading**, slashing the runtime from **3 hours to 3 mins (98%)**.
- Collaborated with cross-functional teams to build a credit risk calculator to analyze real-time exposure for high-value transactions, generating **$230M revenue** through optimized risk decision-making.
- Worked closely with business analysts and developers to automate regression testing workflows, saving **12 hours/week** in manual validation for BA's and accelerating developer debugging by **20%**.
- Reduced critical incidents by **30%** with **Regression based Anomaly detection** and real-time alerting.
- Designed automated **data quality check pipelines** to flag anomalies in risk datasets, saving **6 hours/week** in debugging; recognized with the **Innovative Technology Award** for reliability improvements.
- Wrote unit and BDD tests in Spring Boot using **JUnit** and **Mockito**, boosting code coverage to **80%** and reducing production incidents through robust regression protection.
- Containerized monolithic services by upgrading **Gradle** & **Java** versions, and migrating them from AFS to Docker; established Jenkins pipelines and load balancers to streamline builds and improve **CI/CD** deployment consistency.
- Identified a manual Excel-to-Markdown bottleneck and **mentored an intern** to develop a automation tool using Spring Boot and Angular, cutting test case generation time from **3 hours to 2 mins** and boosting productivity.

Software Engineer Intern *Jan.* 2022 – *July* 2022

- Architected a unified **JVM-based framework** (Java, Scala-Spark) to integrate legacy and modern systems, improving data processing reliability and reducing runtime by **30%** during peak transaction hours.
- Boosted Spring Boot service, implementing parallel row processing, handling **30K rows in 9ms** for high-frequency workloads.

Projects

KYC Verification System | *Python, OCR, Django, OpenCV, REST APIs*

- Built a scalable KYC web system integrating **OCR** and **facial recognition** for real-time identity verification, improving onboarding efficiency with **91%** matching accuracy.
- Engineered backend services with modular APIs and added **anti-fraud mechanisms** like IP logging and anomaly detection, reducing fraud processing time by **25%**.

LLM Agents for Pokémon Battles | *Python, OpenAI GPT, Claude Sonnet, React.js, Node.js*

- Pioneered a modular framework to plug in **LLM-based agents** using **RESTful APIs** for real-time Pokémon Showdown battle state analysis reducing integration time by **40%**.
- Implemented **reinforcement learning** using DQN and **prompt-engineered agents** (COT, TOT, Zero/Few-shot) to simulate intelligent decision-making, achieving **65%** win rate over heuristic-based agents.