

Utkarsh Gupta

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EDUCATION

Vellore Institute of Technology, Vellore - B-Tech Computer Science Engineering (CSE) (**8.61 CGPA**), *Jul 2022 – Jun 2026*

Seth M.R. Jaipuria School -XII Board (Percentage – 94.75%), 2022

Seth M.R. Jaipuria School - X Board (Percentage - 97.4%), 2020

SKILLS

Programming Languages: Java, Python, C, C++.

Web Development: HTML, CSS, JavaScript, Spring, Spring Boot, JPA, JDBC, Hibernate.

Tools and Technologies: SQL, Maven, Agile, Amazon Web Services (Aws), Model Context Protocol.

CS Fundamentals: Data Structures and Algorithms, Object-Oriented Programming (OOPs), Operating System, Database Management Systems, Multithreading, SDLC.

EXPERIENCE

SWE intern - Paytm

May 2025 – July 2025

- Developed a high-throughput backend module for the Model Context Protocol (MCP) server, handling over 5 million merchant mandate queries per day with <150ms average response time.
- Integrated AI/ML-based anomaly detection models (via Python microservices) for real-time tracking of merchant mandates, reducing false positives by 38% in mandate violation alerts.
- Collaborated with a cross-functional team of 8 (ML engineers, DevOps, backend team) to enable end-to-end testing, CI/CD deployment, and scalable service rollout to 1,200+ merchants.
- Designed and deployed an end-to-end Gemini-powered merchant assistant, reducing manual support tickets by 45% by automatically resolving merchant queries through intelligent suggestions.

PROJECTS

Banking System

- Engineered transaction processing for deposits, withdrawals, and transfers, optimizing for 99.99% uptime.
- Ensured transaction integrity and consistency using ACID properties and transactional support.
- Simplified functionalities for creating, updating, and deleting customer accounts and achieved a transaction processing time of less than 5 milliseconds.
- Administered customer profiles, maintaining accurate personal information, account details, and contact information, and reducing profile update time by 30%.
- Planned a comprehensive audit trail system, enabling tracking of transaction histories and enhancing accountability by 40%.

AI-Powered Merchant Query System – MCP Server Project

- Built an advanced NLP-powered query system using the Model Context Protocol (MCP) to fetch merchant data from distributed sources.
- Orchestrated multi-query functionality within the NLP system, allowing simultaneous processing of three distinct merchant data requests and reduced average query resolution time by 15 seconds.
- Developed a remote client module integrated with Claude AI for intelligent query understanding and response generation.
- Integrated real-time graph and statistics visualizations (e.g., transaction volume trends, regional performance, etc.) into the response pipeline.
- Analysed a feedback-based learning loop to improve response accuracy and ranking through user interaction history.

ACHIEVEMENTS

- Honored as the Best Scholar with a Gold Medal, recognized for outstanding academic performance, intellectual brilliance, and exceptional dedication to excellence.
- Initiated collaborative animation project, mentoring 15 club members in character design and storyboarding techniques, culminating in a showcase viewed by 200+ students and faculty, fostering creativity and teamwork.