VANSHIKA AGRAWAL (she/her)

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Education

University of Massachusetts Amherst   **Expected: May 2026**
Master of Science in Computer Science   *Amherst, Massachusetts*
Current Coursework: Advanced Algorithms, Systems for Data Science, Theory of Software Engineering

Maulana Azad National Institute of Technology   **Jul 2018 – May 2022**
Bachelor of Technology in Computer Science and Engineering · CGPA: 9.23/10 · Rank: 2/210   *Bhopal, India*
Coursework: Data Structures, DBMS, Operating System, Machine Learning, Natural Language Processing, Network Security

Professional Experience

Deutsche Bank Group   **Jul 2022 – Jul 2024**
Senior Technology Analyst   *Pune, India*
Played a pivotal role in the development of a greenfield application for the bank's Reconciliations Department, targeting projected savings of €45M over 5 years while streamlining 14 legacy applications for more intuitive workflows.

- Crafted a suite of user-centric utilities and UI screens using **React.js**, adopted by over 15 Business Analysts, enhancing daily reconciliation processes, driving team collaboration, and improving workflow management.
- Optimized the core matching platform using **Apache Spark**, resulting in a 40% improvement in processing speed for high-volume reconciliations and enabling real-time data analysis for stakeholders.
- Embedded **JWT** tokens in all APIs for access control, with generic user permissions managed via **SQL** in Oracle, ensuring secure access for 450+ users and achieving 100% privacy compliance and improved audit scores.
- Standardized React.js coding standards for **OSS** compliance and testing, reducing production bugs, while mentoring junior developers on best practices in React.js and database management.
- Designed a tailored **Oracle Database** solution that segmented user access for 6 service groups; achieved a 95% reduction in cross-service data access and enhanced compliance with data protection regulations in a **microservices** architecture.
- Spearheaded the development of a centralized configuration management system using **SpringBoot**, **Git** & **Encryption** protocols, resulting in a 40% reduction in manual deployment efforts and streamlined version control across 5 teams.

Altruist Technologies Private Limited   **May 2021 – Jul 2021**
Software Developer Intern   *Remote*

- Architected & developed a secure Virtual Hospital ◉ web application using **SpringBoot** and native **HTML/CSS** with key functionalities like appointment booking, prescription generation, notification workflows & a document repository.
- Engineered a robust **WebRTC** framework using **WebSocket** for real-time collaboration capabilities.

Projects

AI-Powered Travel Planning Platform ◉   **Oct - Dec 2024**

- Architected a **React.js** and **Spring Boot** web application integrated with a sophisticated **LLM**, generating personalized travel itineraries within 5 seconds.
- Formulated an **AI-powered** packing assistant with shareable, trackable checklists and integrated Trip History tracking for seamless trip management.
- Built a Travel Planning Essentials suite with 3+ features including a Long Weekend Calculator.

UMate: A Roommate Matching Platform for University Students ◉   **Nov 2024**
HackUMass 2024   *CICS UMass*

- Constructed a web app with **React.js** & **Flask**, implementing 10+ APIs for user auth and profile management.
- Designed and optimized **MongoDB** database with nested JSON schemas and indexing for enhanced query performance; integrated **AWS S3** for scalable image storage.
- Engineered a **recommendation model** using cosine-similarity to suggest users with top 5 best matches.

Thrift - A Rent & Resale Platform ◉   **Mar 2021**
SheHacks 2021   *IIIT Allahabad*

- Conceptualized a web app during a hackathon using **Django** & **SQLite** to enable clothing rental and resale, supporting real-time inventory updates and transaction management for up to 100 products.
- Devised a robust automated messaging system using **Twilio API** to deliver real-time order updates.
- Developed a review system with **sentiment analysis** to assess product likability & market demand insights with 85% accuracy.

Technical Skills

Languages: Java, Python, C++, PHP, HTML, CSS/SASS, JavaScript, SQL
Frameworks/Technologies: SpringBoot, Django, React.js, Bootstrap, WebSocket, ActiveMQ, Apache Spark, Wijmo
Database: Oracle, MongoDB, Neo4j
Tools: Git, GitHub, Bitbucket, Jira, JUnit, Jest
Others: Hexagonal Architecture in Microservices, SDLC & Agile Methodologies, User Interface Design