Muskaan

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EDUCATION

Master of Science, Computer Engineering   **Aug 2024 – May 2026**
Arizona State University   *Tempe, Arizona*

Bachelor of Technology, Computer Science and Engineering   **Sept 2020 – May 2024**
Vellore Institute of Technology   *Vellore, India*

SKILLS

Programming Languages: Python, C++, Java, JavaScript, TypeScript, SQL, R, Bash, MATLAB

Systems & Software Engineering: Data Structures, Algorithms, Client-Server Architecture, Concurrent Processing Concepts, Distributed Systems Fundamentals, Secure Software Design Principles, Performance Optimization

Frontend Development: React.js, Next.js, Redux, HTML, CSS, Responsive Design, State Management

Cloud & Infrastructure: Linux, AWS (EC2, S3), Azure, Docker

Databases & Data Systems: MySQL, PostgreSQL, MongoDB, Data Modeling, Query Optimization, ETL Pipelines

Tools & Development: Git, GitHub, CI/CD, Agile (Scrum), REST APIs, Testing, Debugging, Code Reviews

Data & Analytics: Pandas, NumPy, Matplotlib, Power BI, Statistical Modeling, Machine Learning Fundamentals

PROFESSIONAL EXPERIENCE

Graduate Research Assistant – Software / Data Systems Engineering   **Oct 2025 – Present**
Arizona State University, Global Institute of Sustainability & Innovation   *Arizona, USA*

- Developed automated distributed data collection services using Python, Flask, and REST APIs enabling reliable real-time ingestion of environmental datasets.
- Engineered backend ETL workflows using Pandas, NumPy, and SQLAlchemy supporting large-scale data transformation across distributed research database systems.
- Implemented secure API authentication and role-based access control mechanisms for controlled data access.
- Designed scalable database architectures improving query performance and data retrieval latency for high-volume datasets.
- Built monitoring dashboards using Power BI and Matplotlib enabling real-time system observability and performance tracking.
- Collaborated in Agile environment using Git for version control, code reviews, and reproducible pipeline deployments.

Frontend Software Engineering Intern   **Feb 2024 – May 2024**
AssetPlus Consulting   *Noida, India*

- Developed responsive web applications using React.js, JavaScript, HTML, and CSS improving application performance and cross-platform compatibility.
- Designed reusable UI components and modular frontend architecture supporting scalable enterprise dashboards for 200+ users.
- Collaborated closely with backend teams to integrate RESTful APIs and ensure seamless frontend-backend communication.
- Improved frontend code maintainability by following modular component-based architecture and reusable design patterns.
- Participated in Agile SDLC including sprint planning, debugging sessions, code reviews, and production deployment support.

IoT Data Analysis Intern   **May 2023 – Jul 2023**
Mutelcor GmbH   *Delhi, India*

- Built scalable data pipelines processing daily IoT sensor readings supporting real-time monitoring and analytics workflows.
- Performed feature engineering and exploratory data analysis to support predictive modeling and anomaly detection.
- Developed Python-based analytics and ML models for anomaly detection and predictive device failure analysis improving system reliability.
- Designed automated monitoring dashboards and alerting systems enabling infrastructure monitoring and operational insights.
- Performed end-to-end testing, debugging, and QA validation across IoT devices ensuring data integrity and production stability.

PROJECTS

ServiSecure: Automated Alert System for Vehicle Servicing   **Jan 2025 – Mar 2025**

- Built automated vehicle service monitoring system using Python backend and Twilio API integration for real-time SMS notifications.
- Implemented computer vision pipeline using OpenCV and Tesseract OCR for license plate recognition and validation.
- Designed MySQL relational database supporting transactional vehicle service lifecycle tracking.
- Designed and deployed a personal portfolio website using Next.js, Redux, and Tailwind CSS to showcase full-stack and frontend projects.
- Implemented modular backend services following client-server design architecture.