

Mihika Maheshwari

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EDUCATION

BITS PILANI

BACHELOR OF ENGINEERING IN COMPUTER SCIENCE AND ENGINEERING

Teaching Assistant (Jan 2025 - Mar 2025): Chemistry Laboratory for Prof. Sourav Bag

Hyderabad, India | August 2023 – July 2027

GPA: 7.71/10

TECHNICAL SKILLS

Languages: C, C++, Python, SQL, Java, JavaScript, HTML/CSS

Technologies: Git, Linux, Oracle SQL

EXPERIENCE

BID ALERT | INTERN

Guntur, India | May 2025 - July 2025

- Engineered BidGPT to deliver context-aware responses across bidding processes, terms, and company-specific queries, reducing manual bid clarification effort by 25–30
- Collaborated with a 6-member team to review requirements, run design discussions, and coordinate testing for BidGPT.
- Expanded accessibility by adding on-demand translation of BidGPT responses into user-selected languages, supporting users across different languages.
- Refined front-end usability by refactoring UI components for responsiveness and clarity across desktop and mobile devices.

PROJECTS

BID ANALYZER

PYTHON, STREAMLIT, HTML, CSS

- Architected an end-to-end AI tool for automated tender document analysis, reducing manual review time by 60% across multi-PDF tenders using PDF parsing, chunked text processing, and context-aware Q&A with the Groq LLaMA-3 API.
- Enhanced usability and clarity, achieving <2s latency and reliable handling of 20+ page documents via a lightweight web UI with streaming, summaries, progress tracking, and robust error handling.

TXNSHIELD

PYTHON, STREAMLIT

- Designed a modular Machine Learning pipeline for credit card fraud detection handling automatic preprocessing, model training, and real-time inference via a Streamlit app (<50ms latency).
- Achieved fraud recall of 85% on a highly imbalanced dataset (0.17% fraud rate) using SMOTE and tuning a Random Forest model using GridSearchCV.

SOURCETRACK

PYTHON

- Engineered Git-like version control system with SHA-1-based object storage, commit DAGs, branching, and history traversal.
- Incorporated 9 test suites with 48 validation checks ensuring deterministic behavior, data integrity, and semantic alignment with core Git internals.

RELIX

PYTHON

- Programmed in-memory SQL engine with a custom SQL parser supporting core DDL/DML operations with WHERE filtering, AND/OR predicates, datatype validation, and strict primary-key enforcement.
- Implemented Nested-Loop Join logic for INNER, LEFT, RIGHT, and FULL joins, supported by 160+ automated test cases covering edge conditions.

MEMCORE

PYTHON

- Architected user-space OS memory manager with heap allocation (First Fit, Best Fit, Buddy System), block splitting/coalescing, and fragmentation & utilization analysis using explicit memory metadata.
- Simulated a kernel-driven virtual memory system with paging, segmentation, FIFO/LRU page replacement, page faults, and per-process address spaces, validated via automated pytest stress and invariants testing.

ROOMSKETCHER

JAVA SWING

- Led a team of 4 to develop 2D floor planning desktop application featuring an interactive canvas with real-time spatial validation for rooms, doors, windows, and furniture placement.
- Incorporated persistent session management, enabling users to save and reload floor plans across sessions via serialized layout data.

NOVADB

MYSQL, PL/SQL

- Modeled end-to-end pharmacy data flows with ER/EER diagrams and normalized relational schemas (3NF) to support inventory control, supplier management, sales, and prescription lifecycle tracking.
- Built constrained relational tables and PL/SQL automation with primary/foreign keys, CHECK and NOT NULL constraints, triggers, and stored procedures to enforce data integrity and pharmacy business rules.

CAMPUSPATH

HTML, CSS, JAVASCRIPT

- Developed a web-based campus navigation platform with an interactive map and an integrated chatbot to assist new students and visitors.

INVOLVEMENT

Member and Mentor, ACM-W Chapter - Provide technical guidance and mentoring in programming and project development.