ABHISHEK CHOUDHARY

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Education

VIT Bhopal University, CGPA: 8.68　　　　　　　　　　　　　　　　　　　**2022 − 2026**
B.Tech - Computer Science and Engineering with specialization in AI-ML　　　*Madhya Pradesh*

TECHNICAL SKILLS

Languages: Java, Python, C++, SQL.
Frameworks & Libraries: Spring Boot, Angular, WebSockets, ThymeLeaf, TensorFlow, Keras, Scikit-learn
Databases: MySQL
Developer Tools & Version Control: Git, Docker, Postman, IntelliJ IDEA, VS Code, Colab
Cloud Deployment: AWS, Render, Vercel, GitHub

PROJECTS

Mancala Game ↗ | Java, Spring Boot, WebSocket, AI, Docker, AWS EC2　　　　　**June 2025**

— Engineered a full-stack, real-time web application with **3 distinct game modes**, featuring a low-latency multiplayer experience using **Spring Boot WebSockets (STOMP)** for state synchronization.
— Built an intelligent **AI opponent** with three difficulty levels, capable of evaluating game states to determine optimal, human-like moves without relying on hard-coded strategies.
— Developed a highly interactive and responsive UI using **Thymeleaf and JavaScript (ES6)** to render game state changes in real-time, implementing over 10 UX enhancements.
— Led the end-to-end cloud deployment on **AWS EC2**, encompassing infrastructure provisioning, network security configuration (**VPC Security Groups**), and the implementation of a **Caddy reverse proxy** for automated **SSL/TLS encryption (HTTPS)**.

AI-ML Food Preparation Prediction System ↗ | TensorFlow, Keras, Scikit-learn, Python　　**March 2025**

— Trained and evaluated a suite of deep learning models using TensorFlow and Keras, achieving high prediction accuracy with R^2 **scores of 0.85–0.94** across multi-meal forecasts.
— Synthesized a dataset of over 9,000 records to **model complex food consumption correlations** and executed comprehensive data preprocessing, including feature scaling and **one-hot encoding**.
— Optimized model performance through **hyperparameter tuning and early stopping callbacks**, leveraging over **25 input features** like historical consumption and seasonality.
— Quantified the business impact, projecting a **15-26% increase in kitchen resource efficiency** and an **18-25% reduction in food waste** due to precise demand forecasting.

Mess Management System ↗ | Java, Spring Boot, Angular, MySQL, Docker　　　　**Nov 2024**

— Spearheaded the development of a full-stack mess management system to serve over **6,000 students**, engineering a scalable backend and a responsive frontend with role-based access control.
— Architected and deployed over **10 RESTful APIs** to handle **student enrollment, automate billing, and allow for real-time administrative updates to menu content**, reducing overhead by **16-24%**.
— Outlined a roadmap for future enhancements, including automated payment reminders and the integration of the ML-driven food preparation prediction model.
— **Containerized** the back-end for deployment on **Render** and deployed the front-end on **Vercel**, ensuring high availability.

ACHIEVEMENTS

- Demonstrated strong algorithmic thinking and proficiency in Data Structures by solving **500+ problems** on competitive programming platforms like LeetCode, HackerRank.
- Successfully managed the end-to-end lifecycle of all major projects, from concept and development to containerization and cloud deployment on platforms like AWS, Render and Vercel.

CERTIFICATIONS

- **Applied Machine Learning with Python** - Used in Food Prediction Project.
- **Intermediate Machine Learning** - Used in Food Prediction Project.