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, SQL, JavaScript, C++, HTML/CSS
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: Render, Vercel, GitHub

PROJECTS

Online Multiplayer Mancala Game | Spring Boot, WebSockets (SockJS, STOMP), Thymeleaf, Render **In Progress**

- Architected a real-time Mancala application supporting both session-based multiplayer and private 2-player lobbies.
- Engineered a low-latency, real-time gameplay experience by implementing robust bidirectional communication and state synchronization via WebSockets (SockJS/STOMP).
- Constructed a dynamic and responsive front-end using HTML, CSS, and JavaScript with Thymeleaf for server-side rendering of the 14-pit game board.
- Successfully containerized and deployed the application on Render, making it publicly accessible for live gameplay.

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

- Engineered and trained 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 robust dataset of over 9,000 records to model complex food consumption correlations (e.g., rice with rajma) and executed comprehensive data preprocessing.
- Fine-tuned model performance through strategic 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 | Spring Boot, Angular, MySQL, Docker, Git **Nov 2024**

- Spearheaded the development of a centralized mess management system, automating record-keeping and billing to serve a community of over **6,000 students**.
- Architected and deployed over 10 RESTful APIs to handle student enrollment, automate billing cycles, and manage dynamic menu content, reducing administrative overhead by an estimated **16-24%**.
- Outlined a strategic 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.

Breast Cancer Detection using CNN (Team of 5) | Scikit-Learn, TensorFlow, Python **Sept 2024**

- Initiated the project by developing and evaluating baseline Machine Learning models on a dataset of over 8,000 tabular records to establish performance benchmarks.
- Advanced the solution by implementing a Convolutional Neural Network (CNN) trained on over 5,000 medical images to capture complex features missed by traditional models.
- Achieved a big **37% improvement in diagnostic accuracy** with the CNN approach compared to the baseline models.

ACHIEVEMENTS

- Solved **500+ questions** on various platforms demonstrating strong problem-solving skills and data structure knowledge.
- Deployed all major projects to production environments, ensuring they are accessible and usable by anyone, showcasing end-to-end development and deployment expertise.

CERTIFICATIONS

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