Abhinav Dixit

+91 9598505354 abhinavdixit978@gmail.com LinkedIn Github

Education

Vellore Institute of Technology **2022 - 2026**
Bachelor of Technology in Computer Science & Engineering *8.09/10 CGPA*

Technical Skills

Programming Languages: C++, Python, HTML, CSS, JavaScript
Full Stack Frameworks: MongoDB, MySQL
Machine Learning: Scikit Learn, Seaborn, SVM, PCA, CNN, Pandas, Matplotlib

Projects

Cervical Cancer Risk Prediction (ML) **Python, SVM, PCA, GWO**

- Architected a machine learning pipeline for cervical cancer detection using Python and ResNet-50, applying Principal Component Analysis (PCA) to reduce feature dimensionality from 76,000 to 1,000 and optimize computational efficiency.
- Engineered a Support Vector Machine (SVM) classifier fine-tuned with the Grey Wolf Optimizer (GWO) algorithm to resolve class imbalance, achieving a 99% predictive accuracy in automating cytology image analysis.
- Developed a clinical decision support tool designed to accelerate diagnostic timelines, successfully demonstrating the capability to enhance early-stage detection rates through sophisticated automated image processing.

S&P 500 Economic Trends Analysis **Python, Pandas, Matplotlib, Seaborn**

- Built an automated data extraction pipeline using Python (BeautifulSoup, Requests) to scrape raw financial data from web sources, ensuring a continuous flow of real-time market information.
- Performed rigorous data cleaning and wrangling with Pandas, standardizing inconsistent datasets to improve data integrity and enable accurate Exploratory Data Analysis (EDA) of S&P 500 trends.
- Designed comprehensive data visualizations using Matplotlib and Seaborn to translate complex economic indicators into actionable insights, effectively communicating market correlations to stakeholders.

VITMed Online Medical Portal **MERN**

- Developed a comprehensive full-stack healthcare platform using the MERN stack (MongoDB, Express, React, Node.js), streamlining medical services and record management for the VIT Bhopal campus community.
- Engineered a scalable backend architecture with Node.js and RESTful APIs, implementing optimized MongoDB schemas that significantly improved data retrieval speeds and system performance.
- Designed a responsive, role-based user interface using React and Material-UI, creating distinct dashboards for patients and doctors that enhanced usability and reduced administrative workload.

Certifications

- **MongoDB Database Administrator (MongoDB University)**
- **Oracle Data Science Professional (Oracle)**