Vimal Manoharan

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EDUCATION

SRM University, Kattankulathur   Chengalpattu, India
B. Tech in Computer Science; CGPA: 8.91   *Sep. 2022 – Present*

Velammal Vidhyashram, Mambakkam   Chennai, India
12th Grade: 90%, 10th Grade: 94%

TECHNICAL SKILLS

Programming Languages: C/C++, Java, Python, JavaScript
Web Development: HTML5, CSS3, Tailwind CSS, React.js, Node.js, Express.js, MUI, Bootstrap, Redux
Machine Learning: Numpy, Pandas, Matplotlib, SciKit-Learn, Tensorflow Framework
Database Management: SQL, MySQL, MongoDB, PostgreSQL
Other Tools and Skills: VS Code, IntelliJ IDEA, Data Structures and Algorithms, OOP, Operating Systems, DBMS
Version Control: Git, GitHub

PROJECTS

Patient Management and Billing System 🔗   *React, Node.js, Express.js, MongoDB*
- Developed a full-stack patient management and billing system for a hospital clinic, currently used in real-time, with a React front-end and Node.js/Express.js back-end.
- Implemented advanced filtering by patient name, service type, and date, along with bill history tracking and download functionality.
- Designed a medicine stock system that auto-updates inventory during billing, ensuring real-time tracking and reducing manual errors.
- Enabled dynamic Word document generation for billing, auto-populating patient and service details for seamless invoicing.

Smart Product Comparator | *Spring Boot, Selenium, REST APIs, Gemini LLM, RapidAPI, Async, JSON* 🔗
- Built an end-to-end smart product comparison engine that extracts ASIN/PID from Amazon and Flipkart using headless Selenium-based scraping.
- Applied Jaro-Winkler string similarity with brand-weighted scoring to identify the best-matching product titles among top 50 scraped results.
- Implemented parallel API invocation via `ExecutorService`, improving data aggregation speed by over 60%.
- Leveraged Google Gemini (via REST) to generate intelligent comparison reports: pros/cons, trade-offs, and buyer personas.
- Designed clean RESTful APIs with structured JSON output for seamless React frontend integration.
- Combined real-time scraping, external API chaining, and LLM-powered summarization into a unified e-commerce intelligence pipeline.

AQI Prediction AI Regression Model 🔗 | *Python, Scikit-learn, Pandas, NumPy, Matplotlib*
- Used data sourced from the Indian government's open data platform, data.gov.in
- Developed and compared multiple regression models (Linear, Polynomial, Decision Tree, Random Forest, SVR) to predict AQI using historical air quality data.
- Utilized Python libraries (Scikit-learn, Pandas, NumPy) for data preprocessing, and model training.
- Visualized data distributions and model predictions with Matplotlib for insightful analysis.
- Demonstrated that Random Forest Regressor provided the best predictions based on model evaluation results.

ACHIEVEMENTS/EXTRACURRICULAR ACTIVITIES

Improved problem-solving skills and algorithmic thinking by participating in multiple coding competitions, hackathons, and the Intel Unnati Gen AI program, where I earned a certificate for creating a Generative AI-based quiz game.

Solved 200+ Data Structures and Algorithms problems on platforms such as LeetCode, GeeksforGeeks, and Codeforces.

Vice Captained school cricket team in intercity tournaments, showcasing leadership and teamwork.

Finalist in a notable hackathon, recognized for innovative solutions and collaborative efforts.

Secured 3rd place in city-level Super Speller competition, demonstrating strong language proficiency and communication skills.