RAYYAN ABDULLAH

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Personal Summary

Enthusiastic Computer Science student with a focus on Artificial Intelligence and Optimization Techniques. Passionate about machine learning and algorithmic innovations to solve real-world challenges. Committed to continuous learning and technical excellence.

Education

B.Tech in Computer Science (AI Major) **IIITDM, Kancheepuram**

Senior Secondary **CBSE**
Percentage: 75.49% — Year: 2022

Secondary **CBSE**
Percentage: 81.9% — Year: 2020

Trainings / Certifications

- **Introduction To Data Analytics** *Dec 2024*
  Internshala Trainings (Virtual)
- **Data Management and Analysis With MS Excel** *Dec 2024 – Jan 2025*
  Internshala Trainings (Online)
- **Graph Theory Camp** *Jan 2025*
  Attended a 3-day camp with Codeforces Master Manas Kumar Verma, mastering 11+ advanced graph techniques.
- **Data Visualization With Power BI** *Jan 2025 – Feb 2025*
  Internshala Trainings (Online)
- **SQL For Data Analysis And Insights** *Feb 2025 – Mar 2025*
  Internshala Trainings (Online)

Projects

- **OTML Project: Golden Search Optimization for Machine Learning** *Oct 2023*
  - → Implemented a novel optimization algorithm by integrating the Golden Search method with the Sine Cosine algorithm.
  - → Achieved balanced global exploration and local exploitation.
  - → Empirically evaluated performance on benchmark functions.
  - → Validated improvements using Wilcoxon Rank Sum tests and presented findings in a comprehensive report and presentation.
- **AI Project: Solving N-Queens Problem Using AI Techniques** *Apr 2024*
  - → Tackled the classical N-Queens problem using a mix of brute force, backtracking, and AI-based heuristics.
  - → Integrated search strategies such as DFS and BFS for solution space exploration.
  - → Applied metaheuristic approaches including Simulated Annealing and Genetic Algorithms.
  - → Optimized solution complexity with Python implementations of all methods.
  - → Compared algorithmic efficiency and success rates across board sizes.
- **PRML Project: BMI Prediction and Gender Estimation Using Facial Images** *Dec 2024*
  - → Extracted 512-dimensional facial features from the Illinois Prisoners Dataset via FaceNet-Pytorch.
  - → Applied PCA to reduce features to 41 components (retaining 95% variance).
  - → Employed linear regression for BMI prediction (MSE=19.46, R^2=0.2458).
  - → Used logistic regression for gender classification with high accuracy.
  - → Analyzed offence distributions to derive actionable insights.
- **J.P. Morgan Classification of Legal Documents** *Dec 2024*
  - → Designed and implemented a machine learning pipeline.
  - → Classified legal documents based on 150+ attributes.
  - → Reduced errors in loan servicing and saved over 360,000 hours annually.
- **KPMG Data Analysis with Excel** *Jan 2025*
  - → Cleaned and standardized customer, transaction, and demographic data, ensuring consistency and accuracy for analysis.
  - → Conducted segmentation by wealth, gender, and industry, identifying key customer groups and behavioral trends.
  - → Analyzed sales trends, product performance, and customer purchase patterns, providing actionable insights into revenue drivers.
  - → Estimated customer lifetime value (CLV) to highlight high-value customer segments and enhance long-term profitability.
  - → Provided recommendations for targeted marketing campaigns to increase customer engagement and retention.

- **Computer Networks Project: Secure HTTP/HTTPS Server-Client Model in C** *Oct 2024*
  - → Built a simple HTTP/HTTPS server-client model in C.
  - → Utilized socket programming and the OpenSSL library.
  - → Implemented SSL/TLS handshakes to establish secure communication.
  - → Processed HTTP requests/responses to demonstrate secure data transmission.
- **Airline Performance Analysis using Power BI** *Feb 2025*
  - → Transformed and cleaned airline datasets in Power Query, standardizing the data for visualization and analysis.
  - → Created DAX measures to analyze passenger bookings, ticket statuses, and flight performance metrics.
  - → Built interactive dashboards with compact visuals for flight operations and customer insights.
  - → Configured relationships, slicers, and drill-throughs, enabling dynamic analysis and real-time reporting via Power BI Service.
- **Walmart's Retail Insights Optimization** *Mar 2025*
  - → Analyzed sales growth, customer segmentation, and product performance using advanced MySQL queries.
  - → Identified top-performing branches, profitable product lines, and anomalies in sales transactions to improve strategies.
  - → Segmented customers into spending tiers, identified repeat buyers, and analyzed payment preferences by city.
  - → Delivered actionable insights through SQL-driven analysis, enhancing decision-making with clear visualizations and reports.
- **DBMS Project: Hostel Complaints Management System** *Mar 2024*
  - → Developed a robust complaints management system using MySQL to streamline the lodging and resolution of hostel complaints.
  - → Implemented user registration for students, staff, and administrators with role-based access control.
  - → Designed a normalized relational database with tables for Students, Complaints, Staff, Administrators, and Logs to eliminate redundancy.
  - → Utilized optimized SQL queries, stored procedures, and triggers to automate complaint tracking and assignment.
  - → Enhanced data integrity and operational efficiency through systematic data validation and auditing.

Relevant Coursework

Data Structures and Algorithms, Artificial Intelligence, Machine Learning, Object-Oriented Programming, Computer Networks, Theory of Computation, Operating Systems, Database Management Systems, Compiler Design.

Skills

Hard Skills: C, C++, Python, Networking, Operating Systems, GitHub, VS Code, LaTeX, Power BI, MySQL
Soft Skills: Problem Solving, Creative Designing, Analytical Thinking, Communication, Team Collaboration