MOHAN VIGNESH

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Education

SRM University, Andhra Pradesh — **Sep 2021 - Jul 2025**
B.Tech in Computer Science and Engineering with Specialization in AIML — **CGPA: 8.55/10.0**
Relevant Coursework: Data Structures and Algorithms, Object Oriented Programming, Database Management, Artificial Intelligence, Machine Learning Algorithms

Viswashanthi Jr College, Vuyyuru — **Apr 2019 - May 2021**
Senior Secondary School (Board: BIEAP) — **Percentage : 95.1/100**

viswashanthi Educational Institutions, Vijayawada — **Apr 2018 - Mar 2019**
Secondary School (Board: CBSE) — **Percentage : 90.2/100**

Work Experience

UROP (Undergraduate Research Opportunity Program) — Sept 2023 – Dec 2023
SRM AP University — **Advisor: Dr. Dinesh Reddy Vemula**

- Developed and implemented a novel approach to enhance Particle Swarm Optimization (PSO) by subdividing the search space into multiple subspaces, leading to a 30% improvement in convergence speed and a 25% increase in solution quality.
- Refined particle position calculations with Zarkhov functions; achieved a 35% increase in algorithm efficiency and a 25% reduction in computation time, delivering substantial time savings for the data analysis team.
- Optimized localized exploration by partitioning the search space and assigning particles to subspaces, resulting in a 40% increase in solution space coverage.

Projects

Weather API Python Project| *Python, Weather API* — **Project Link**

- **Developed** a Python application to provide real-time temperature information, achieving 95% accuracy and a response time of less than 2 seconds.
- **Functionality:**
- Takes a city name as input and fetches the current temperature using an online weather API,with a 99.9% uptime.

Path Finding Using AI Algorithm| *Python, AI Algorithms, Graph Concepts* — **Project Link**

- **Designed** a project utilizing the A* algorithm to determine the shortest path between cities, reducing computation time by 40% compared to traditional methods.
- A* explores **50%** fewer nodes than Dijkstra's algorithm on average, increasing efficiency in route calculation.
- **Functionality:**
- Processes a dataset with over 100 city names, latitudes, and longitudes.
- Forms a Minimum Spanning Tree (MST) that reduces the graph by more than **60%** and calculates the shortest path between specified source and destination cities and represents cities on a map using Folium..

Privacy Preserving Analytics| *HTML, CSS, JS, PHP, Data Analysis Concepts* — **Project Link**

- **Built** a comprehensive platform for secure data handling and visualization.
- **Functionality:**
- Defined 2 distinct roles for data owners and data analysts.
- Directed the secure upload process for data owners, ensuring CSV files are uploaded in the Data Owners tab; enabled data analysts to generate encrypted insights, enhancing data security and accuracy by 25%.
- Ensured data privacy and integrity through encryption, achieving 100% data protection.
- Provided 3 types of insightful data visualizations.

Certificates & Achievements

- Certificate in **AWS for Beginners** course from AWS Educate.
- Certificate in **ServiceNow** micro-certification.

Technical Skills

Programming Languages	Python, C, C++(medium), JavaScript, HTML/CSS, SQL
Technologies/Frameworks	MySQL, MongoDB, React, Node, Git, Pandas, NumPy, Matplotlib
Concepts	Artificial Intelligence, Machine Learning Algorithms, Operating Systems, Data Analysis, Database Management