Vanjivaka Sairam

Bachelor of Technology
in Mathematics and Computing
Indian Institute Of Technology, Ropar

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Education

Degree	Institute/Board	CGPA/Percentage	Year
Bachelor of Technology	Indian Institute of Technology, Ropar	7.74 (Till 5th Sem)	2022-2026
Senior Secondary	State Board of Intermediate Education	98.4%	2021
Secondary	State Board of Secondary Education	9.8	2019

Projects

- **E-commerce Website with Admin Dashboard using MERN Stack** *Nov 2024 – Dec 2024*
  Full-Stack Web Application **GitHub**
  – Developed a full-featured e-commerce web application leveraging the MERN stack (MongoDB, Express.js, React.js, and Node.js).
  – Implemented essential functionalities such as user authentication, product catalog, shopping cart, order processing, and secure checkout.
  – Designed and integrated an intuitive admin dashboard for managing products, users, and orders efficiently.
  – Built a dynamic and responsive frontend using React.js, ensuring seamless user experience across devices.
  – Utilized MongoDB for scalable data management, enabling efficient storage and retrieval of user, product, and transaction data.
- **Simple Product Store** *Feb 2025 – March 2025*
  Full-Stack Web Application **GitHub**
  – Developed a modern, full-stack product store application using the PERN stack (PostgreSQL, Express.js, React.js, Node.js).
  – Designed an intuitive and responsive user interface with TailwindCSS and DaisyUI for an enhanced user experience.
  – Implemented Arcjet-based bot detection and rate limiting to improve security and prevent automated threats.
  – Utilized Zustand for efficient global state management, ensuring seamless data flow across the application.
- **Digital Image Encryption using AES and RSA Cryptographic Algorithms** *March 2024 – June 2024*
  Group Project **GitHub**
  – Designed and implemented a secure image encryption system by integrating symmetric (AES) and asymmetric (RSA) cryptographic algorithms to ensure both speed and security.
  – Employed the Advanced Encryption Standard (AES) for high-performance encryption of large-scale digital images.
  – Applied Rivest–Shamir–Adleman (RSA) encryption to protect AES keys, ensuring secure key distribution and enhanced resistance to interception.
  – Utilized the Python Imaging Library (PIL) for image preprocessing, segmenting images into 128-bit blocks to align with AES encryption requirements.
- **Effective Path Finding using A* Algorithm** *Oct 2023 – Nov 2023*
  Data Structures (CS201) **GitHub**
  – Designed and implemented an A* (A-star) algorithm in C to determine the most efficient and least-hop paths between cities in a road network modeled as a matrix.
  – Constructed a custom city map using Maps API to simulate realistic geographical data and enhance user interaction.
  – Utilized the Haversine formula to compute straight-line (heuristic) distances between cities based on their geographic coordinates.

Technical Skills

- **Programming Languages**: C, C++, JavaScript, Python, MATLAB
- **Web Development**: HTML, CSS, React.js, Node.js, Express.js
- **Databases**: MongoDB, PostgreSQL
- **Deployment and DevOps**: AWS, Vercel, Netlify, Railway, Docker
- **Software Tools and Libraries**: Git/Github, Postman, Numpy ,Pandas, Matplotlib, Jupyter Notebook, Google Collab

Key courses taken

- **CSE & Maths**: Data Structures and Algorithms, Foundations of Data Science, Machine Learning, Evolutionary Game Theory, Discrete Math, Arduino Programming (tinkering), Calculus, Linear Algebra, Differential Equations, Probability and Statistics, Numerical Analysis (MATLAB)
- **Others**: Signals and Systems, Basic Electronics, Economics

Positions of Responsibility

- **Coordinator**, Volleyball Club, IIT Ropar *July. 2023 - May. 2024*

Miscellaneous

- **Algo University Graph Theory Programming Camp**, May 2024 ***Certificate***
- **56th Inter-IIT sports Meet, Bombay**, Dec,2023
- **57th Inter-IIT sports Meet, Kanpur**, Dec,2024