C. Pranav Sharma

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Education

Amrita Vishwa Vidyapeetham Coimbatore, India
Bachelor of Technology in Computer Science and Engineering *Aug 2023 – April 2027*

- **CGPA**: 8.2/10.0
- **Relevant Coursework**: Data Structures & Algorithms, Operating Systems, Computer Networks, DBMS, Machine Learning, Embedded Systems, Probability & Statistics.

Technical Skills

Languages: Java (DSA), Python, C (Embedded), JavaScript, SQL, Shell Scripting
Web Development: React.js, Node.js, Express.js, FastAPI, TailwindCSS, HTML5/CSS, Firebase
Data & ML: Scikit-Learn, Pandas, NumPy, K-Means, SVM, ARIMA, Tableau, Seaborn
Tools & Platforms: Git/GitHub, Linux (Ubuntu), Docker, Keil IDE, Wireshark, Postman

Projects

Parallel MapReduce Log Analyzer | *Python, Multiprocessing, Linux* November 2023

- Engineered a high-performance server diagnostic tool using Python's `multiprocessing` capabilities to parallelize log analysis.
- Designed a custom MapReduce architecture to distribute tasks across CPU cores, significantly reducing processing latency.
- Optimized file I/O operations to efficiently handle and parse high-volume synthetic server log datasets.

Embedded Defence Radar System | *C, STM32 (ARM Cortex-M4), Keil IDE* June 2025

- Developed a hardware-based object detection system using STM32 microcontrollers, Ultrasonic sensors, and Servo motors.
- Implemented **register-level programming** (GPIO, Timers, Interrupts), bypassing HAL abstraction for maximum execution speed.
- Integrated an OLED display to visualize real-time distance and angle data, creating a functional radar sweep interface.

Restaurant Food Ordering Site | *React.js, Firebase, JavaScript* Septembet 2024

- Built a real-time online ordering platform with a responsive React frontend and seamless Firebase backend integration.
- Architected a synchronized order management system allowing instant updates between customer menus and admin dashboards.
- Implemented secure user authentication and optimized state management to ensure a smooth, latency-free user experience.

UPI Transaction Time-Series Analysis | *Python, ARIMA, StatsModels* January 2025

- Analyzed growth and seasonal patterns in large-scale UPI transaction datasets to identify spending trends.
- Utilized **ARIMA modeling** to forecast future transaction volumes, decomposing time-series data into trend and residual components.
- Leveraged statistical methods to provide data-driven insights into the rapid adoption of digital payments in India.

Global Conflict Data Visualization | *Python, Tableau, Seaborn* October 2025

- Conducted Exploratory Data Analysis (EDA) on the Global Terrorism Database (GTD) and Conflict Data Program (GED).
- Developed interactive **Tableau dashboards** and geospatial plots to map conflict intensity and casualty correlations.
- Utilized Python's Seaborn and Geopandas to uncover and visualize hidden patterns in regional geopolitical instability.

Image Processing Engine | *Python, NumPy, Convolution* Feburuary 2024

- Created a custom image processing tool that allows users to apply multiple filters and transformations.
- Programmed **2D convolution kernels** manually to implement Gaussian blur and edge detection without high-level CV libraries.
- Optimized complex matrix operations using NumPy and recursion to ensure efficient pixel-level manipulation.

Achievements

Team Lead, Smart India Hackathon (SIH) 2024: Led a team through internal selection to Round 2; directed project architecture and pitch strategy.

Certifications: AWS Cloud Practitioner.