ANURAAG SINGH

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PROFESSIONAL SUMMARY

Computer Science undergraduate specializing in AI/ML Integration and Full-Stack Development. Proven expertise in building scalable RAG pipelines, optimizing distributed systems, and developing cross-platform applications. Recognized as a National Finalist in the Smart India Hackathon. Passionate about leveraging Python, React, and Cloud Technologies to solve complex problems in space-tech and predictive analytics.

EDUCATION

Vellore Institute of Technology (VIT)   Bhopal, India
Bachelor of Technology in Computer Science (Specialization: AI & ML)   *2023 – 2027*
Relevant Coursework: Data Structures & Algorithms, Machine Learning, Deep Learning, Database Management Systems (DBMS), Operating Systems, Cloud Computing.

TECHNICAL SKILLS

Languages: Python, C++, JavaScript (ES6+), SQL, Dart, Java
AI/ML: Pandas, Scikit-learn, XGBoost, TensorFlow, PyTorch, Google Gemini API, RAG, Vector Databases
Web Development: React.js, Next.js, Node.js, Express.js, Flask, Tailwind CSS, HTML5/CSS3
Infrastructure: Git, Docker, AWS (EC2, S3), Firebase, Supabase, PostgreSQL, MongoDB
Core Concepts: Data Structures, OOP, RESTful APIs, System Design, Asynchronous Programming

PROJECTS

Automated Conjunction Risk Assessment | *Python, XGBoost, Pandas, SGP4*   July 2025
- Developed a high-precision satellite collision prediction system using XGBoost and Orbital Mechanics (SGP4), designed to analyze complex telemetry data.
- Engineered a parallelized data pipeline using multiprocessing, achieving a 75% reduction in processing time for large-scale orbital datasets.
- Drastically reduced false positive alerts by implementing rigorous data validation and noise filtering techniques, enhancing mission safety protocols.

RecallAI - Context Aware Chatbot | *Python, Flask, Google Gemini API*   Oct. 2024
- Architected a Retrieval-Augmented Generation (RAG) system to query custom knowledge bases, eliminating AI hallucinations and ensuring factual accuracy.
- Integrated Google Gemini API with Vector Embeddings for semantic search, boosting retrieval accuracy by 90% over traditional keyword search.
- Built a robust RESTful API with Flask to handle concurrent requests, ensuring sub-second latency for end-users.

Chatty Charm (Mobile AI Assistant) | *React Native, REST APIs, Mobile optimization*   Dec. 2024
- Designed a unified mobile interface (iOS/Android) that aggregates multiple Large Language Models (LLMs), allowing users to switch models dynamically.
- Implemented real-time token streaming to reduce perceived latency, improving user engagement metrics.
- Optimized application state management and local storage to persist conversation history efficiently across sessions.

StreamVerse | *React.js, Tailwind CSS, TMDB API*   April 2024
- Developed a high-performance content discovery platform fetching dynamic data from the TMDB API.
- Achieved a Google PageSpeed score of 95+ by implementing Lazy Loading, code splitting, and image optimization techniques.
- Designed a modular, component-based architecture ensuring scalability and ease of future feature integration.

ACHIEVEMENTS & CERTIFICATIONS

- **National Finalist, Smart India Hackathon (SIH):** Led a 6-member team to build a low-cost prosthetic hand with EMG recognition, achieving an 85% cost reduction vs. commercial alternatives.
- **NPTEL Cloud Computing (Elite Gold):** Scored in the Top 5% (Elite status) in IIT Kharagpur's advanced cloud infrastructure course.
- **Google Solution Challenge 2025:** Recognized for developing AI-driven solutions addressing UN Sustainable Development Goals.