HIMANSHU SONI

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PROFESSIONAL SUMMARY

Technically adept M.Tech Computer Science student at VIT Vellore (Batch 2027) specializing in high-performance system architecture and AI-driven automation. Proficient in C/C++, Java, and Python with hands-on experience in building predictive simulation engines and advanced computer vision pipelines. Proven track record in developing full-stack applications that utilize machine learning, NLP, and Explainable AI (XAI) to solve complex industrial and socio-economic problems.

EDUCATION

Vellore Institute of Technology (VIT) — **Vellore, India**
Master of Technology in Computer Science and Engineering — **2025 – 2027**
Current CGPA: 7.88 (First Semester)

Institute of Engineering and Technology (IET) — **Agra, India**
Bachelor of Engineering in Computer Science and Engineering — **2018 – 2022**
CGPA: 7.0

TECHNICAL SKILLS

- **Languages:** C, C++ , Java , Python .
- **AI & Vision:** CLIP, OpenCV, scikit-learn (Gradient Boosting), Attention Heatmaps.
- **Core Engineering:** Data Structures & Algorithms (DSA), Operating Systems, Computer Architecture, OOP, DataBase Managment Syatem.
- **Infrastructure & Cloud:** Git, Linux (Bash), AWS (S3), Microsoft Azure, MySQL, MongoDB, Postman.
- **Web Technologies:** FastAPI, Vite, Tailwind CSS, Chart.js, RESTful API Design.

WORK EXPERIENCE

Physics Wallah | *Big Data Intern (Remote)* — **Sep 2024 – Dec 2024**
- Engineered Python-based ETL workflows for large-scale educational datasets, ensuring 100% data integrity.
- Optimized reporting speeds by applying structured data transformations and analytical computations.
- Performed deep-dive data validation to identify patterns and facilitate data-driven decision-making.

Zidio Development | *Java Full Stack Developer Intern (Remote)* — **Apr 2024 – Jun 2024**
- Developed modular backend services using **Java and Spring Boot**, focusing on thread safety and concurrency.
- Refactored REST API logic using optimized data structures to minimize system latency and improve throughput.
- Optimized application performance by applying advanced OOP principles and structured code refactoring.

TECHNICAL PROJECTS

Snowflake: Policy Impact Simulation Engine | *Python, FastAPI, scikit-learn, Chart.js*
- Built a predictive engine using **Gradient Boosting** for inflation forecasting and a **Leontief Input-Output model** to analyze interdependencies across 8 key economic sectors.
- Implemented a multi-factor **Composite Risk Index (0-100)** incorporating economic risk and social unrest probability.
- Developed a full-stack dashboard featuring real-time comparative scenario analysis and RESTful FastAPI routes.

AI-Powered E-commerce Image Quality Analysis | *FastAPI, CLIP, OpenCV, React*

- Designed a validation pipeline for resolution ($\geq$1000px), blur (Laplacian variance), and brightness/contrast parameters.
- Integrated the **CLIP model** to detect image-text mismatches with AI-powered similarity scoring.
- Engineered **Visual Attention Rollout heatmaps** to explain CLIP decision-making using Explainable AI (XAI).
- Built a modern responsive UI using React 18 and Tailwind CSS with real-time quality checklists and suggestions.

CERTIFICATIONS & ACHIEVEMENTS

- **NEC Finalist – IIT Bombay:** National-level finalist in the elite engineering challenge at IIT Bombay.
- **Competitive Programming:** Focus on Tree and Linked List optimizations for time/space complexity reduction.
- **CISCO Certifications:** CCNAv7, Cybersecurity Essentials, and CPAP (Programming in Python).