Aayush Sharma

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Education

Vellore Institute of Technology, *B.Tech. Bioengineering* *Bhopal, Madhya Pradesh*
CGPA: 8.05/10.0 *expected July 2026*

Kanha Makhan Millennium School, *CBSE - Class XII* *Mathura, Uttar Pradesh*
CGPA: 9.40/10.0 *April 2021 - Feb 2022*

Experience

Summer Intern *(Remote)*
Lupin Ltd. *Mar 2025 - May 2025*

- Evaluated the launch potential of 15+ novel drugs in the cardiovascular and diabetes pipeline by analyzing extensive Phase I-III clinical trial data, primary endpoints, and safety profiles to provide key strategic recommendations.
- Conducted a comprehensive medico-marketing and competitive intelligence analysis of Finerenone vs. Eplerenone, forecasting a 500 million dollar market potential for Finerenone by 2033, growing at a 15.3% CAGR.
- Developed a full-scale business model for a new digital health platform, creating a go-to-market strategy and financial plan with a projected INR 33.2 Crore first-year investment and a target of onboarding 150+ partners.

Technical Skills

Languages & Technologies: Python, R, MySQL, MATLAB, Power BI, Tableau, MS Excel, TensorFlow, Bioconductor
Tools & Platforms MEGA12, MEGAN6, Autodesk Fusion 360, Flask, Streamlit, Figma, Git, DBMS, PyMOL

Projects

AminoSphere - *Python, Streamlit, py3Dmol, Meta AI ESMFold* LINK - *Sept 2025*

- Deployed an interactive Streamlit-based web application for real-time 3D protein structure prediction (up to 1000 residues) using Meta AI's ESMFold, featuring 360° molecular visualisation, pLDDT confidence scoring, mutation impact analysis, and achieving 70% reduction in modelling time.

Neuro-Scan AI - *Python, TensorFlow, Flask, VGG16* LINK - *Aug 2025*

- Developed an AI-powered web application for brain tumour detection and classification from MRI images using TensorFlow and VGG16 transfer learning. Achieved 97% overall accuracy with 100% precision for Pituitary tumours across 4 tumour categories, implementing real-time processing with Flask and 128x128 image preprocessing.

Stillpoint - *React, TypeScript, Tailwind CSS, Vite* LINK - *July 2025*

- Deployed a mindful journaling web application for personal reflection and habit tracking using React 18, TypeScript, and Tailwind CSS. Created local storage for 100% privacy-first data persistence and integrated Recharts for analytics visualization, achieving 90+ Lighthouse performance scores with responsive design across all devices.

Activities

Siemens Immersive Design Challenge *(Remote)*
3-month virtual hackathon *Jan 2025 - Mar 2025*

- Advanced to Semi-Finalist (Top 40) from 250+ teams in a prestigious national innovation design competition.
- Designed a bionic arm featuring advanced haptic feedback and innovative TENG-based sensory technology.
- Implemented novel actuator and TENG integration, reducing costs to INR 12–18 Lakhs for 500–700 units/year production.
- Optimized CAD design to slash production cycle time by 35-40%, supporting an INR of 60-125 Cr revenue target.

Innovative Design and Entrepreneurship *Indore, Madhya Pradesh*
5-days bootcamp *Jan 2024*

- Secured 2nd Runner-Up distinction among 15+ teams in a national entrepreneurship bootcamp pitching session.
- Formulated a comprehensive business plan to transition a hackathon prototype into a scalable B2G venture.
- Architected a B2G revenue model based on licensing TRL-3 biomimetic technology for government partnerships.

Smart India Hackathon *Jalandhar, Punjab*
6-days hackathon *Dec 2023*

- Achieved Grand Finalist status at the G20 Smart India Hackathon, a premier national innovation competition.
- Pioneered a novel biomimetic membrane generating 2.5 L/hr/m2 of water with a 240 L/day output.
- Validated droplet formation via simulations, modelling collection rates of 200 µL/hr per 0.8 cm2 surface area.
- Conceptualized a scalable rural water solution for arid regions, costing only INR 10K–25K per unit.