Purva Rana

purvarana.com | purvarana1617@gmail.com | linkedin.com/in/purva-rana | github.com/purva-rana | +91 7893747153

Professional Summary

As an AI systems builder with a designer's eye, my experience spans **Applied AI, human-AI collaboration, and Spatial Computing (AR/VR)** through academic research, hackathons, and industry-facing development. I am focused on building **human-centered intelligent systems** through rigorous engineering, model optimization, and end-to-end system design.

Education

MIT - World Peace University, Pune, Maharashtra **CGPA: 8.76**
Bachelor of Technology, Computer Science & Engineering (Final Year) *May 2026*
Interdisciplinary curriculum blending Computer Science with Peace Studies, Global Cultures, and Ethics.

Skills

- **AI & Applied ML:** PyTorch, TensorFlow, Generative Models, Computer Vision, NLP, Sentiment Analysis, PEFT
- **Development:** Python, C++, Java, Unity (C#), AR/VR Development, SQL, Git, Linux, MERN, CI/CD
- **Math & Theory:** Linear Algebra, Calculus, Probability, Statistics, Graph Theory, Automata Theory.
- **Design & Creative**: UI/UX, Figma, AR / VR Prototyping, Blender (3D Modeling)
- **Languages & Status: U.S. Citizen** fluent in English, Hindi, Marathi, Gujarati; learning French & Japanese

Research & Projects

histARy: Generative 3D Reconstruction & AR *Capstone Research*
Designed and implemented an end-to-end reconstruction pipeline aimed at digitally preserving eroding historical structures by combining generative super-resolution techniques with real-time AR visualization. Addressed persistent outdoor tracking drift by implementing geometry-driven multi-target tracking, resulting in stable, high-precision overlays that perform reliably on mobile devices.

MindscapeVR: Neural Simulation & Embodied AI *VR & Simulation*
Designed 3D neural models in Blender and integrated them into a Unity-based VR environment for neurosurgical training, enabling immersive visualization of complex biological structures.

Sustainable Code Gen: LLM Optimization & Profiling *HPC Research*
Leading research on performance-aware AI code generation by fine-tuning large language models on the CodeNet corpus to produce optimized C++ solutions with reduced runtime and memory usage.

Terms & Conditions Analyzer: NLP & Information Extraction *NLP & Ethics*
Built an NLP system to parse dense legal contracts and flag potentially unfavorable clauses, improving transparency and interpretability for non-expert users.

Experience

Tech Advisor, IRIS Club
Led the technical direction for the college's official tech club. Bridged the gap between backend engineers and designers by enforcing "Design-First" engineering principles, resulting in a 40% increase in engagement on the club platform.

Freelance Web Developer
Delivered professional websites for individuals and small businesses, handling **end-to-end design, development & deployment**. Implemented **responsive design** and optimized site performance, improving client usability and engagement.

Achievements & Extracurriculars

- **Hackathons & Competitions:** Winner - HackMIT Ideathon 2025; Top 5 - DataQuest Track at HackMIT Hackathon; Smart India Hackathon (SIH) & ICPC participant.
- **Academic Excellence**: Received **merit-based scholarship** for all four consecutive years of undergraduate studies. Secured the highest score in Computer Science (191/200**)** in AY 2021–22.
- **Workshops**: Attended **IET Workshop on Research Methodologies**; Patent Drafting workshop by **Prof. Phani Kumar Pullela** and **Advocate Pranav Bhat**; **AI Mastermind** program by Outskill.
- **International Olympiad Medalist:** Multiple medals in Informatics, Cyber, Mathematics, Science, French, and English.

Relevant Coursework

- Data Structures & Algorithms | Artificial Intelligence | Machine Learning | NLP | High Performance Computing | AR & VR
- Computer Networks | Operating Systems | Cybersecurity | Cloud Computing | System Software & Compiler Design

Certifications

- Full Stack Web Development - DevTown
- Data Structures & Algorithms Bootcamp - Google Developer Student Clubs (GDSC), Microsoft Learn