AARGH RAI

+91 ********** | aarghrai.com | aargh.rai@gmail.com | github/FloatingComet62 | linkedin.com/in/aargh-rai

EDUCATION

Thapar Institute of Engineering and Technology, Patiala, Punjab — *Aug 2024 – Present*
B.E. in Artificial Intelligence and Machine Learning — *CGPA: 8.95*

PROJECTS

SAT App (App) — *Sep 2025 – Nov 2025*
React Native | *Firebase* | *TypeScript (Node.js)* | *DigitalOcean* | *PhonePe*

- Scaled to handle **8,000+ users** by running a TypeScript backend in cluster mode, utilizing all CPU cores to handle high traffic and parallelize work.
- Processed 1,600+ PhonePe transactions worth around **14,000 USD** using idempotent and retry-safe logic to prevent duplicates and ensure smooth payments.
- Improved speed and reduced Firestore reads by designing a better collection structure and adding an LRU Cache to avoid repeated queries.

Mirage AR Showdown (Github) — *Oct 2025 – Nov 2025*
TypeScript | *Express* | *LocAR.js* | *Firebase* | *Docker* | *Kubernetes* | *Three.js*

- Served as **Full-Stack Engineer** for a production **3D/AR location-based game**, developing AR chest rendering with live **GPS** for large-scale, geospatial 3D interactions.
- Architected low-latency **cloud data storage** across all clients using **Firebase**, applying real-time database patterns for consistent state synchronization at scale.

SAT Robot (Github) — *Oct 2025 – Nov 2025*
ROS | *Python* | *Jetson Nano* | *ESP32*

- Designed an **ESP32 mesh network** for a mobile robot, providing robust internet across remote campus areas.
- Applied algorithmic analysis to calculate optimal **ESP32** placement for maximum internet coverage, combining hardware awareness with software-driven network planning.

QueJI (Github) — *Sep 2024 – Present*
Python | *OpenCV* | *YOLOv9* | *CUDA*

- Built real-time **people-counting ML pipelines** operating at **1 FPS on edge devices**, enabling actionable queue analytics for business intelligence.
- Optimized YOLOv9 inference achieving roughly 35 percent speed improvement.
- Developed end-to-end ML workflows from dataset preparation to edge deployment.

EXPERIENCE

White Flower Healthtech Private Limited — *June 2024 – Aug 2024*
Frontend and App developer

- Designed and architected comprehensive, **user-centric wireframes** for a mobile application, translating functional requirements into **intuitive, scalable, and visually** structured user experiences.

SKILLS

Programming Languages: C, Zig, Rust, Typescript, Javascript, Python, Elixir, HTML, CSS
Frameworks: CMake, Tokio, Axum, Express.js, React.js, Next.js, Three.js, Tailwind CSS, FastAPI, Flask
Technologies: Figma, Vercel
Developer Tools: Redis, Postman, Git, Neovim, Firebase, MongoDB, DigitalOcean
Soft Skills: Cross-functional collaboration, Project Leadership, Technical Communication

ACHIEVEMENTS

Winner - HackMol 6.0, NIT Jalandhar — *Apr 2025*

POSITIONS OF RESPONSIBILITY

Joint Secretary — Creative Computing Society, TIET — *Sep 2024 – Present*

- Organized **HackTU 7.0**, **MLH Official Hackathons**, with **1000+ participants**.
- Organized and supported large-scale technical events and bootcamps with **2000+ participants**.