Medhansh Garg | Computer Engineering @ UIUC

Linkedin | GitHub | Portfolio | Email | Phone Number

Education

University of Illinois, Urbana-Champaign — *BS, Computer Engineering* | August 2023 - May 2027 (Expected)

- **Relevant Coursework:** Data Structures, Discrete Math, Linear Algebra, Electronics, Probability, University Physics

Skills

Languages: C, C++, Python, JavaScript, TypeScript, Java, SQL, HTML/CSS
Web & Frameworks: React, Next.js, Flask, Spring Boot, Tailwind CSS, Node.js
ML & Tools: TensorFlow, PyTorch, Pandas, Tesseract.js
DevOps/Security/Systems: Docker, Kubernetes, Linux, Git, GStreamer, Firebase, WebRTC, Vercel, BurpSuite, Nmap, Frida
Hardware/Embedded: ESP32, Raspberry Pi, Arduino, Qt, MQTT

Certifications

NYUx MicroBachelors Certification in Cybersecurity Fundamentals | June 2022 - April 2023

- Completed 9-course program (A grade) covering **auth/access control**, **network security**, and **penetration testing**

Work Experience

Care Health Insurance, Gurugram — *Cybersecurity Intern* | June 2025 - Present

- Enumerated **60+** internet-exposed services across **4** domains using **Nmap**, **fuzzing**, and **custom scripts**; produced a triaged remediation roadmap for the SOC
- Replicated WAF request-signing to demonstrate **replay-attack risk** and **forged-call feasibility**; delivered **PoC** and mitigations to SOC under coordinated-disclosure practices

Sigpwny, RSO for Cybersecurity at UIUC — *CTF & Badge Development Team* | January 2025 - Present

- Working with **embedded systems** + **PCB design** to engineer DEFCON-style PCB badge featuring **ESP32** integration and SAO compatibility
- Co-designing CTF challenges for annual UIUCTF

IoT++, Remote — *Intern* | June 2024 - August 2024

- Optimized **YOLO** fire/human detector to **13×** throughput and **+62%** accuracy via pruning, tiling, and NPU-aware quantization; deployed on **Orange Pi** with **GStreamer**
- Containerized inference and pipelines with **Docker/Kubernetes/Minikube** and **Azure**; built classical ML (**RNNs, Random Forests**) for routing + small **RAG tool** for internal data

Projects

RemoteCam — *Personal Project* | March 2025 - Present

- Building cross-platform webcam streaming app using **WebRTC** with **Firebase** signaling and secure code-based pairing
- Developing mobile **PWA** frontend with **Next.js**, **React**, **Tailwind CSS**, and **TypeScript** for real-time camera streaming
- Implementing Linux desktop client in **QtPython** with **GStreamer** integration for virtual webcam output

AlberFlowy — Personal Project | June 2025 – Present

- Reverse-engineered Workflowy's private API to enable fast **full tree browsing** + **CRUD** operations via **Node.js CLI**
- Implemented **Google OAuth2** with **Puppeteer** automated login + session capture to remove manual token handling
- Engineered **C++** Albert plugin with **tree caching**, **optimistic cache updates**, **autocompletion**, **timer-based refresh** to asynchronously sync changes

Uplift, Illinois — *Hackathon Project* | February 2024

- Built cross-platform **React Native** app for hackathon; designed UI in **Penpot** under time constraints
- Integrated **LangChain** + **OpenAI** for contextual chat responses; used **Tesseract.js** for OCR

Athletic Court Booking System — *Social Impact Project* | September 2022 - January 2023

- Built full-stack court booking app (React, Spring Boot, SQLite) used by **300+ apartments**, reducing manual errors
- Designed UI/UX in Figma and later ported frontend to React Native; received **85% positive user feedback**
- Developed user portal with **real-time conflict prevention + updates** using industry-standard polling techniques
- Developed admin dashboard to streamline booking management

Research Experience

Independent Research, Shobhit University — *Author* | June 2022 - October 2022

- Authored research on Leet Speak's impact on password security (**834K+ samples**); published with **13 references**
- Used **Hashcat**, **zxcvbn**, and **entropy metrics** to assess password strength and inform policy recommendations
- Found that Leet Speak can increase password complexity, but has marginal impact on password vulnerability
- Proposed actionable recommendations for password policies to mitigate risks
- Published paper with **13 references**: https://doi.org/10.32628/IJSRST229567