

# Medhansh Garg

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https://hackoverflow404.github.io/Portfolio

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## EDUCATION

- **University of Illinois, Urbana-Champaign** Urbana, IL  
*Bachelor of Science in Computer Engineering* Aug. 2023 – May 2027 (Expected)

## EXPERIENCE

- **Illinois MicroTech** Urbana, IL  
EOH Project Lead + HackerFab Member Oct. 2025 - Present
  - Leading UIUC MicroTech's Engineering Open House technical showcase for **1,000+ attendees**
  - Designing **3-axis stepper-controlled** motion platform for wafer photolithography demo
- **CS 124 Honors** Urbana, IL  
Lead Web Developer Aug. 2025 - Present
  - Lead developer for official CS 124 Honors website (**Next.js, React, Supabase**)
  - Built UIUC SSO login via **CILogon + Banner API** role mapping; led **11-person dev team** serving **200+ students**
- **Sigpwny** Urbana, IL  
Badge Developer Jan. 2025 - Sep. 2025
  - Engineered DEFCON-style PCB badge (**250 units**) for UIUC-hosted CTF event
  - Designed **ESP32 hardware + MicroPython firmware** with SAO modular expansion
  - Built **frame-buffer LCD display stack** and badge **UI/UX**
- **Care Health Insurance** Gurugram, India  
Cybersecurity Intern Jun. 2025 - Aug. 2025
  - Identified **60+** internet-exposed services using **Nmap + fuzzing**
  - Reverse-engineered **WAF request-signing**; built **replay attack PoC** in **Burp Suite**
  - Performed Android security testing using **Frida + JADX**
  - Bypassed **SSL pinning** and **root-detection** mechanisms
- **IoT++** Remote  
Software Engineering Intern Jun. 2024 - Aug. 2024
  - Improved **YOLO** fire/human detection accuracy by **62%** and **13x** throughput via **pruning + tiling**
  - Deployed **NPU-optimized** inference on Orange Pi using quantization + **GStreamer**
  - Containerized inference with **Docker + Kubernetes** on **Azure**

## PROJECTS

- **AlberFlowy** <https://github.com/HackOverflow404/AlberFlowy>
  - Reverse-engineered WorkFlowy private API for full tree CRUD via **Node.js CLI**
  - Built **C++ Albert plugin** with **caching + async sync + Google OAuth2 automation**
- **RemoteCam** <https://github.com/HackOverflow404/RemoteWebcam>
  - Built cross-platform **WebRTC** webcam streaming system with **Firebase** signaling
  - **QtPython** Linux client + **Next.js** mobile **PWA** for real-time camera sharing
- **Spotify Wall Art** <https://github.com/HackOverflow404/SpotifyWebController>
  - Repurposed laptop **LCD** with **Raspberry Pi** to build live album-art display
  - Integrated **Spotify API** for real-time track data, lyrics, and animations

## RESEARCH

- **Biometric authentication and cybersecurity in the digital age** - Publication: MedCrave Author
  - Reviewed **biometric vs traditional** authentication systems and proposed layered auth model.
  - DOI: 10.15406/bbij.2025.14.00437
- **Evaluation of Leet Speak on Password Strength and Security** - Publication: IJSRST Author
  - Authored paper on Leet Speak impact on password strength (**834K+ samples**). DOI: 10.32628/IJSRST229567

## PROGRAMMING SKILLS

- **Languages:** TypeScript, Python, C, C++, Java
- **Technologies:** Next.js, Flask, Spring Boot, Docker