

## WORK EXPERIENCE

### Harbor Labs, Senior Research Scientist, Baltimore, MD, USA

Feb 2024 – Present

- Led 30+ end-to-end security assessments, penetration tests, and code reviews for medical device manufacturers, spanning web and mobile applications, cloud infrastructure, connected and embedded systems, firmware, hardware, software, and protected health information (PHI), directly enabling client products to obtain FDA regulatory clearance.
- Partnered with 15+ client teams across engineering, product, regulatory, and quality compliance functions to risk-assess and remediate 200+ critical and high-severity vulnerabilities and drive shift-left architectural and design changes across the SSDLC, while mentoring 4+ junior researchers on vulnerability triage, exploit validation, V&V, and client-facing communication.
- Authored and owned cybersecurity compliance documentation, including eSTAR pre-market submissions, post-market surveillance processes, SBOMs, and threat models (Attack Trees, STRIDE, Attack Chains), aligned with FDA guidance, AAMI TIR57, AAMI/ISO 14971, IEC-62304, and IEC 81001-5-1, for multiple Class I, II, and III medical devices.
- Spearheaded internal tooling and team-wide assessment playbooks, architecting AI-augmented workflows with locally-hosted LLMs (Ollama) for privacy-preserving analysis of sensitive client data, alongside automated triage and report-generation pipelines that improved engagement consistency and reduced repeat findings.

### SiriusXM, Security Intern, New York City, NY, USA

May 2023 – Aug 2023

- Worked with the Application Security Team to implement Developer Security Training for 1000+ engineers.
- Performed 30+ Security Risk Assessments and redesigned the evaluation process to make it 4x faster.
- Automated report notification system to improve Vulnerability Management for 25,000+ assets with Python.

## EDUCATION

### Johns Hopkins University, Baltimore, MD, USA

Aug 2022 – Dec 2023

- Degree: Master of Science in Security Informatics | GPA: 3.99/4 | TA: Security and Privacy in Computing (Fall 2023)
- Courses: Security and Privacy in Computing, Introduction to Cryptography, Cybersecurity Risk Management, Computer and Mobile Device Forensics, Network Security, Ethical Hacking, Mobile and Wireless Security

### Indian Institute of Technology (IIT) Goa, India

Aug 2018 – July 2022

- Degree: Bachelor of Technology in Computer Science and Engineering | GPA: 3.64/4
- Courses: Introduction to Information Security, Computer Networks, Computer Architecture, Operating Systems, Data Structures and Algorithms, Artificial Intelligence, Machine Learning, Software Systems Lab

## RESEARCH

### Industrial Research Advisor, Johns Hopkins University

Jan 2026 – Present

- Advising a team of 5 graduate student researchers on "Sweet Targets: A Security Analysis of Regulated Diabetes Monitoring Devices," leading threat modeling, methodology design, and hands-on security evaluation of FDA-regulated CGMs and BGMs across BLE, NFC, companion mobile apps, and backend infrastructure.
- Mentoring students on offensive security techniques and guiding coordinated vulnerability disclosure, CVE submission to MITRE, and open-sourcing of research artifacts to advance medical device security.

## TECHNICAL SKILLS

- **Programming:** Python, C/C++, Bash, Rust
- **Operating Systems & Architectures:** Linux, macOS, Windows, Android, iOS, FreeBSD; ARM, AArch64, x86/x86-64
- **Application & Product Security:** SAST, DAST, SCA, OWASP Top 10, Threat Modeling, SSDLC, DevSecOps, Code Review, API Security, VAPT
- **Hardware & Firmware Security:** JTAG, SWD, UART, Serial Console, Chip Enumeration, Firmware Extraction, Secure Boot, Fuzzing
- **Hardware Hacking:** GreatFET One, J-Link Segger, Ubertooth One, Chameleon Ultra DevKit, USB-to-TTL, JTAGulator, Binwalk, Ghidra
- **Mobile & Wireless:** BLE, NFC, RFID, Wi-Fi, LightBlue, nRF Connect, jadx, MobSF, Frida, ADB
- **Penetration Testing:** Kali, Burp Suite, Charles Proxy, OWASP ZAP, Nmap, Wireshark, Nessus, TestSSL, SonarQube, Dependency-Track, CycloneDX, Syft
- **Cloud & Infrastructure:** AWS, Azure, GCP, Docker, Kubernetes, CI/CD, IAM, TLS/mTLS, PKI, HSM, KMS
- **Standards & Frameworks:** NIST CSF, MITRE ATT&CK, FDA Premarket Cybersecurity, IEC-62304, AAMI/ISO 14971, AAMI TIR57, IEC 81001-5-1, ISO 27001, HIPAA
- **AI/ML Security:** OWASP Top 10 LLM, Adversarial ML, Prompt Injection, Ollama, Claude, Cursor, Copilot
- **Certifications:** CompTIA Security+, CNSS

## PUBLICATIONS

- "ScottCare Aermos™: Secure By Design Whitepaper," 2026 – [Link available upon request.](#)
- Acknowledged contributor for IEEE publication, "Compliance without Completeness: A Case Study on SBOMs in Light of FDA Premarket Cybersecurity Guidance," 2025 – <https://ieeexplore.ieee.org/document/11418023>.
- Devang Jain and Sharad Sinha, "SolSec Labs: Virtual Labs for Learning Smart Contracts Security," IEEE Potentials, Nov 2022 – <https://ieeexplore.ieee.org/document/9935793>.

## ACHIEVEMENTS

- Invited guest lecturer, EN.601.644/444 Medical Device Cybersecurity, Johns Hopkins University, 2026.
- Selected for the 2023B class of Google's CS Research Mentorship Program (CSRMP).
- Awarded Gold Medal for Best Outgoing Student (Overall) from the Class of 2022 at IIT Goa.
- Ranked 29<sup>th</sup> out of a total of 823 teams globally with a perfect score in Brixel CTF 2020 (Winter Edition).