

ARSHDEEP SINGH

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PROFESSIONAL EXPERIENCE

Cerence Inc., Pune, India | Software Engineering Intern

January 2023 – July 2023

- Intern working on tour guide application for AI Automotive Startup. Developed JSON-based tour generation & Dynamic Geofencing modules, enabling efficient creation of interactive guided tours, enhancing application responsiveness by 25%.
- Responsible for addressing app crashes and patching key bugs within POI audio triggering and email system, increasing product reliability by 40%, decreasing crash times by 7 minutes.
- Led project to enhance overall experience through implementing GenAI features. Designed wireframes and visual designs for POC applications, collaborating with researchers to integrate a LLM into the UI.
- Streamlined release documentation, detailing changes, enhancements, and bug fixes to ensure clarity across stakeholders, leading to 15% decrease in post-release support inquiries.
- Automated audio generation for waypoint description, utilizing Text-to-Speech services to obtain mp3 responses for 8 diverse routes, accurately gauging word recognition rates & minimizing loss percentages.
- Initiated gathering customer insights on tour experiences, integrating feedback API, doubling form submissions from 500 to 1000 & driving actionable improvements for product evolution.

ACADEMIC PROJECTS & LABS

Signature-based Intrusion Detection Strategies

May 2024

- Configured Intrusion Detection and Response tools to detect brute-force attacks on SSH and RDP services, leveraging correlation of authentication failures.
- Demonstrated efficacy by simulating brute-force attacks using Hydra, capturing alerts on IDS interface, and mapping attack techniques to the MITRE ATT&CK framework.

Case Study on IP Fragmentation Attack

March 2024

- Designed a case study on the incident response plan to outline precise actions for network security breaches, ensuring rapid response and minimizing the impact of IP Fragmentation attacks.
- Visualized the attack process using Scapy, designing network diagrams, simulating a fragmentation attack to demonstrate the manipulation of UDP packet headers and offsets.

One-Time Password Vulnerability Assessment

February 2024

- Leveraged BurpSuite to analyze critical vulnerability allowing OTP bypass via Response Manipulation on organization's website, prompting implementation of robust security measures.
- Crafted structured bug report highlighting absence of encryption standards leading to ability of users to tamper with booking values, recommending input validation & multi-factor authentication to secure user access.

Privacy versus Convenience: Usable Security Research

December 2023

- Conducted comprehensive research assessing user behavior towards data privacy, illustrating the pivotal role of shaping resilient security protocols while upholding user-centered design principles.
- Deployed website, distributed via QR code, observing user consent in granting cookie access in exchange for free incentives, identifying 99% participants not reviewing data policy, highlighting lack of awareness in the community.

TECHNICAL SKILLS

Programming Languages: Python, Java, C, SQL

Databases & Cloud: MySQL, PostgreSQL, Firebase

Network Protocols: TCP/IP, DHCP, WAN, VPN, DNS, RDP, WLAN, Firewalls, Routing

Ethical Hacking & Penetration Testing: Burp Suite, Metasploit, SQL Injection, Netcat, Nmap, Wireshark

Application Security: XSS, CSRF, Response Manipulation, OSINT, Threat Analysis

EDUCATION

Pace University, Seidenberg School of Computer Science & Information Systems

New York, NY

Master of Science (MS) in Cybersecurity | **GPA:** 4.0

December 2024

Relevant Coursework: Ethical Hacking, Malware Analysis, Information Security Management, Network Security

Symbiosis International University, SIU

Pune, India

Bachelor of Technology (B.Tech) in Computer Science & Engineering | **Honors:** Security & Privacy

June 2023