Avinash Kumar
Security Engineer III

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Education

Masters in **CyberSecurity** from **EC-Council** University, along with **CEH, CND, CHFI, ECIH and EISM** certifications

Graduated from **Indian Institute of Technology, Kanpur** in 2019, with Minor in **Computer** and Major in Mechanical Engineering

About Me: Demonstrates strong problem-solving abilities, strategic critical thinking, and exceptional attention to detail, complemented by a mindset of continuous learning and the ability to adapt quickly to evolving challenges

Experience

Avalara, Pune   *Sep 2024 - Present*
Software Engineer III

- Resolved 700+ functional bugs in the codebase & developed automated Cypress test cases, improving product reliability by 35%
- Led Gen-AI initiative, deploying NLP-based bots & text-to-SQL capabilities using LangGraph & LangChain, giving 40% reduction in customer response time and increasing customer satisfaction scores by 25%
- Performed code pentesting, identifying & mitigating 15+ high-severity vulnerabilities such as SQL Injection, XSS, & Broken Auths
- Remediated 100+ security threats flagged by Checkmarx within 30 days by my own autonomous python script, increasing overall application security posture to 98% compliance

Samsung Research Institute, Bangalore   *Mar 2023 - Sep 2024*
Software Engineer II

- Implemented a TPM-based security framework by designing and integrating 8 to 10 REST & TPM APIs for server-side certificate provisioning & cryptographic key management, improving secure certificate operations & system integrity.
- Enabled encrypted communication by verifying EKCert & IDBinding with nonce/signature, creating CSRs, and integrating Key Attestation with nonce2 and TPM & AWS storage, ensuring robust key exchange & secure data flow.
- Engineered a critical messaging service to transmit secure communications from Blackboard server to devices, & reduced build time by 60% (10 mins → under 4 mins) with added load testing for multi-device connections
- Added 15-20 APIs that performs connect using token-based authentication along with other operations in Membership service (Service used to connect multiple devices with same SA Account & share data with proper security)
- Led Red Team operations on phones & TVs, identifying & mitigating 20+ Security gaps, strengthening the product's attack resilience
- Integrated Trusted Apps (TAs) on 23% of Androids used globally, securing key communication pathways within TEEs preventing unauthorized access and delivering TEE builds for Qualcomm, TEEgris, & UniSoc chipsets
- Pioneered virtualization for Android security by building & testing secure OP-TEE on Android Virtualization Framework (AVF), decreasing threats to applications running on AVF by 30%

PayPal, Bangalore   *Aug 2021 - Mar 2023*
Software Engineer I

- Conducted comprehensive security tests on the migrated Google Dialog Flow (GDF) architecture, identifying & mitigating vulnerabilities, threats, & edge case failures ensuring 99% secure data handling
- Ranked in the top 1% among participants in the cmd+ctrl 2-day hackathon, completing all 48 challenges & demonstrating strong problem-solving skills in various security scenarios
- Spearheaded migration of chatbot (IVR & chat) for 10+ major locales from Watson to GDF, improving customer support efficiency
- Developed a Neo4j tool for visualizing & optimizing complex workflows, reducing manual effort by 25%, streamlining GDF migration
- Created a new version of Chat-Simulator, improving efficiency by 40%, integrating a computerized Cypress tool to execute test cases, significantly accelerating the testing process ensuring high reliability in production
- Reduced costs by 15% by redesigning GDF architecture & integrating in-house NLP, eliminating reliance on 3rd-party NLP services
- Built a real-time dashboard on Looker to monitor chatbot traffic, reducing 97.9% data latency (48 hours to 1 hour), enabling faster decision-making & improved performance tracking
- Improving legacy WSDL & modern RESTful system integration & scalability by 35% by leveraging TFIDF algorithms to parse raw WSDL text & predict CRUD operation types which then formulate REST APIs via Spring Boot

EXL Services, Gurgaon   *Sep 2019 - Aug 2021*
Data Analyst II

- Applied advanced Entropy Balancing in R & Python, to test & validate hypotheses, making data-driven decision for clients to create 10% more impact on sales & client conversion
- Developed scalable web scraper using Selenium to systematize data scraping, saving clients 50+ hours per week in manual effort
- Utilized text mining & sentiment analysis to tailor customer-specific communications, resulting in a 20% increase in response rates
- Adopted analytics on marketing campaigns, leading to a 17% increase in client conversions through data-driven optimizations
- Developed & automated an encryption tool to reduce data breaches by 25% using VBA to securely store & manage client's personal information, ensuring compliance

Technical Skills

Gen-AI Frameworks	Prompt Engineering on AI models, Automation using N8N, LangGraphs and LangChain
Security Domain	Certified in CompTIA CyberSecurity Track along with Bug-Bounty hunting Rated Hacker level on HackTheBox, PortSwigger, TryHackMe and HackerOne **Pentesting Tools:** Jadx, BurpSuite-Pro, Frida, IDA-Pro, etc.
Backend Domain	ReactJS & NodeJS, Context APIs, MERN stack, Postgres, Elasticsearch, Redis Certified in AWS (EC2, S3, CI/CD), Distributed Systems & blockchain development on RUST **Tools:** GitHub, Git, ELK, Load Testing, Artemis, MQTT, Kafka, Kubernetes, Microservices
Competitive Programming	Rated 1761 (in Advanced Data Structures) on platforms like Codeforces & CodeChef
Language	RUST, C++ / C / C#, Python, Java & SpringBoot, SQL, Android / Windows / Kali-Linux