NUSHARA ARIYAWANSA

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Cybersecurity-focused soon-to-be Computer Science graduate with legal training (LLB) specializing in Application Security and Governance, Risk, and Compliance (GRC). Hands-on experience in OWASP-based penetration testing, automated security tooling, and risk assessment. Passionate about translating technical vulnerabilities into business risk and driving secure development practices.

EXPERIENCE

LSEG (London Stock Exchange Group)
Nov 2024 - May 2025

Intern, Software Engineer - Application Security

- Designed and deployed a Dockerized automated application security testing framework integrating OWASP ZAP, Burp Suite, and Nmap, aligned with OWASP WSTG, enabling repeatable security testing within CI/CD pipelines.
- Developed reusable Python-based scan orchestration and reporting modules, standardizing vulnerability detection and producing structured JSON/HTML security reports.
- Conducted web application security assessments and penetration testing on internal applications and trading platforms, identifying vulnerabilities and supporting risk-based remediation.
- Performed attack surface analysis by reviewing Node.js backend services (Prisma ORM), mapping request flows, data handling, and potential security weaknesses.
- Partnered with engineering teams to document architecture and security considerations, improving secure development awareness across teams.

VizuaMatix
May 2024 - Oct 2024

Pre-Intern, Software Engineer

- Contributed to a government digital licensing platform built with FastAPI, supporting system testing, gap analysis, debugging, and performance optimization to improve reliability and stability of a production system.

EDUCATION

University of Colombo School of Computing, Colombo 7, Sri Lanka
2022 - present

BSc (Hons) in Computer Science

- GPA: 3.6146 /4.00
- Key modules: Operating Systems *(hands-on exposure with xv6)*, Computer Networks *(OSI & TCP/IP models, routing, DNS, HTTP/HTTPS)*, Information System Security *(cryptography, access control, secure communication)*, Digital Forensics *(file system forensics – FAT, NTFS, EXT; memory and network forensics)*

University of London, UK
2021 - 2024

Bachelor of Law (LLB)

- Grade: Second Class Honors (Upper Division)
- Modules: Intellectual Property Law, Contract law, Criminal law, Public law, Tort law, EU law, Property law, Administrative law, Criminology

Visakha Vidyalaya, Colombo 4, Sri Lanka
2007 - 2020

- GCE A/Ls (2020): AAC (Combined Mathematics, Chemistry, Physics)
- GCE O/Ls (2017): 9 As (Core subjects, Business Studies & Accounting, Health, Drama)

Mentee - ScholarX, Sustainable Education Foundation, Sri Lanka
Oct 2023 - May 2024

- Accepted into ScholarX, a competitive mentoring program for high-potential undergraduates in Sri Lanka.
- Was mentored by Dr. Ridwan Shariffdeen, a Research Fellow at the Secure Software Research Group, National University of Singapore.

RESEARCH

Enhancing Covert Data Exfiltration from Smartphones through mmWave FMCW Radar
2024 - present

- Designed a Java-based Android application to modulate smartphone vibration signals using OOK and PWAM schemes, demonstrating a covert data exfiltration channel leveraging physical side effects.
- Built an end-to-end experimental pipeline integrating mobile signal generation, mmWave radar-based side-channel capture, and MATLAB decoding using cross-correlation and adaptive thresholding to evaluate feasibility of stealthy data leakage.

Projects

PortSwigger Web Security Labs (100+ Hands-on Labs)
- Hands-on practice with vulnerabilities including authentication, CSRF, SQL/NoSQL injection, SSRF, clickjacking, path traversal, file upload flaws, API/GraphQL, WebSocket, CORS, and web cache deception.

GRC Risk Assessment Framework (Python, Flask, SQLAlchemy, SQLite, HTML/CSS)
- Built a full-stack Governance, Risk, and Compliance tool featuring Likelihood $\times$ Impact risk scoring, compliance mapping to GDPR/HIPAA/PCI-DSS, policy lifecycle management, and audit logging for accountability.

Phishing Detection System (Python, Flask, Machine Learning)
- Developed a machine learning–based phishing detection system achieving 90%+ accuracy with 30+ URL/email features, providing real-time threat classification and confidence scoring via web and CLI interfaces

Secure File Encryption Tool (Python, PyCryptodome, AES-256, PBKDF2, HMAC-SHA256)
- Developed a cross-platform AES-256 encryption tool with PBKDF2 key derivation and HMAC-SHA256 integrity protection, implementing secure key management and password-based encryption best practices.

Password Strength Analyzer (Flask, Python, JavaScript, HTML5, CSS3)
- Built a real-time password security analyzer with entropy, pattern checks, and breach detection via Have I Been Pwned API, promoting stronger authentication practices.

Full-stack projects
- MicroMart - Distributed e-commerce platform (Java, Spring Boot, REST APIs, JPA, H2/MySQL, Docker, Git)
- Wandr. - Travel platform (Flutter, Next.js, Python, FastAPI, Spring Boot, PostgreSQL, Tailwind CSS, Git)

Skills

Application Security: OWASP Top 10, Vulnerability Assessment & Penetration Testing (VAPT), Secure Code Review

GRC: Security Frameworks (OWASP, NIST), Compliance Standards (GDPR, HIPAA, PCI-DSS, ISO/IEC 27001)

Security & Testing Tools: Burp Suite, OWASP ZAP, Nmap, Postman, Wireshark

Cloud Security: AWS Security, Azure Security (Microsoft Defender, Microsoft Sentinel)

Programming: Python (Flask), Java (Spring Boot), C/C++, SQL, JavaScript/React, RESTful APIs

Platforms & DevSecOps: Docker, Linux, CI/CD Security Integration, Git, MySQL, PostgreSQL, MongoDB

Certifications

ISC2 Certified in Cybersecurity (CC) – Candidate *ISC2*

Security Operations Analyst Career Path – In Progress *Azure Security (Microsoft Defender, Microsoft Sentinel)*

Governance, Risk, and Compliance (GRC) for the Cloud-Native Revolution *LinkedIn Learning*

AWS Educate: Introduction to Cloud 101 *Amazon Web Services*

Achievements

InspiHERTech 2.0: Top 10 Finalist - Competitive Programming, MATLAB, Advanced Mathematics		*Jan 2024*
IEEEXtreme 17.0: 50th Island Rank, 664th Global Rank - Global Competitive Programming		*Oct 2023*
CyberZee'23: Top 10 Semi-Finalist - Inter University Cyber Security Quiz		*Aug 2023*

Leadership Experience and Volunteering

IEEE Student Branch of UCSC: Treasurer (2024/25), Editorial Lead (2023/24)
- Managed budgeting and content for major IEEE events including IEEE Day, InfiniteLoop, and RevolUX.

Rotaract Club of CfPS Law School Vice President (2023/22), Director of Community Service (2022/21)
- Led community service initiatives including charity drives and outreach programs.

Visakha Vidyalaya: Senior Prefect (2018/19), Junior Prefect (2016/17)
- National Squash player, President Girl Guide, Member of the Senior Eastern Band

References

Asanga Wanniarachchi, Architect - Application Security, LSEG - Asanga.Wanniarachchi@lseg.com

Dr. Asanka Sayakkara, Senior Lecturer, University of Colombo School of Computing - asa@ucsc.cmb.ac.lk