Dr. Chanaka Lasantha Nanayakkara (PhD, MSc, BIT, MBCS)

Senior Lecturer in Blockchain / Cybersecurity / Information Security

Postdoctoral Researcher in Artificial Intelligence · Visiting Lecturer

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PROFESSIONAL SUMMARY

Postdoctoral Researcher in Artificial Intelligence and cybersecurity academic with 25 years of experience. Holds a PhD in Information Security and Forensics, an MSc in Network and Information Security with Distinction, and a BIT. Currently undertaking a Postdoctoral Fellowship in Artificial Intelligence at SR University, with an active research programme on AI and machine-learning driven cybersecurity. Serves as a Senior Visiting Lecturer at several UK and Sri Lankan universities, delivering postgraduate and undergraduate modules in cybersecurity, malware analysis, cloud security, and artificial intelligence. Maintains a strong and current research record, with thirteen peer-reviewed journal and conference publications and a contributed book chapter, and contributes to the scholarly community as an IEEE conference reviewer and technical programme committee member. Combines research-informed teaching with extensive enterprise security leadership, and is committed to curriculum development, postgraduate supervision, and advancing knowledge in computing and cybersecurity.

ACADEMIC APPOINTMENTS

May 2026 to Present

VISITING LECTURER

University of Wolverhampton, United Kingdom

MSc programmes (Level 7). Module delivered: Incident Management and Response.

Sep 2023 to Present

VISITING LECTURER

University of Gloucestershire, United Kingdom, Cybersecurity, Advanced Malware Analysis and AI

MSc and BSc (Honours) programmes. Modules delivered: Secure Software Systems Architecture; Reverse Engineering and Memory Forensics; ML-driven Malware Analysis; IoT Security and Intrusion Detection Systems; Cloud Computing Security (AWS, Azure, GCP).

May 2025 to Present

VISITING LECTURER

SLTC Research University, Sri Lanka

BSc (Honours) programmes. Modules delivered: Cyber Warfare and Information Warfare; Blockchain and Applications.

Feb 2019 to Jan 2020

VISITING LECTURER

London Metropolitan University, United Kingdom, Cybersecurity and Cloud Security

BSc (Honours) programmes. Delivered learning outcomes in cloud computing security, network security protocols and policies, and authentication mechanisms and security modelling.

EDUCATION

Feb 2026 to Feb 2027

POSTDOCTORAL FELLOW IN ARTIFICIAL INTELLIGENCE

School of Computer Science and Artificial Intelligence, SR University

Postdoctoral Fellowship Programme in Artificial Intelligence, Advancing Research on AI and Machine-Learning Driven Cybersecurity, Including Adaptive Threat Detection, Cloud Security Intelligence, and The Translation of Research into Applied Security Systems.

2022 – 2025

DOCTOR OF PHILOSOPHY (PHD) IN INFORMATION SECURITY & FORENSICS

IIC University of Technology, Cambodia

Research: "Machine Learning Approaches for Adaptive IP Reputation Validation and Defense in Cloud Security."

2017 – 2018

MASTER OF SCIENCE (MSC) IN NETWORK & INFORMATION SECURITY (DISTINCTION)

Kingston University, United Kingdom

Thesis: "Security Enhancement in Database Grid Infrastructure for Storage Clusters."

2010 – 2013

BACHELOR OF INFORMATION TECHNOLOGY (BIT)

University of Colombo School of Computing, Sri Lanka

Project: Web-Based Inventory, Human Resources, and Payroll System.

2000 – 2005

ADVANCED DIPLOMA IN ELECTRONICS & TELECOMMUNICATION ENGINEERING

City & Guilds of London Institute, United Kingdom

RESEARCH INTERESTS

- AI and machine-learning driven cybersecurity and adaptive threat defense.
- Cloud security, multi-cloud architecture, and intelligent cloud firewall systems.
- IP reputation intelligence, anomaly detection, and moving target defense.
- Malware analysis, reverse engineering, and intrusion detection systems.
- IoT and edge network security, federated learning, and secure software architecture.

PUBLICATIONS

Note: *Several papers are co-authored; full author lists to be confirmed and are shown as "et al." where pending.*

Indexed & Peer-Reviewed Journals

1. Nanayakkara, C.L., et al. (2026). "Dynamic Threat Prevention in Cloud Firewalls Using Hybrid Machine Learning for IP Reputation Intelligence." *Journal of Communications, vol. 21, no. 3. Hybrid RF / SVM / LR / KNN / XGBoost model; 98.04% accuracy.*
2. Nanayakkara, C.L., et al. (2026). "Hybrid Machine Learning-Driven Cyberattack Prevention for Suspicious IP Reputation Validation in Geographically Isolated VPN-Tunnelled IoT Networks." *Taylor & Francis. Federated learning for privacy-preserving IoT security; 98% accuracy.*
3. Nanayakkara, C.L., et al. (2026). "An Unsupervised Machine Learning Approach for Dynamic Anomaly Detection and Risk Defense in Cloud Servers." *International Journal of Research in Computing (IJRC). Isolation Forest, LOF and DBSCAN; 92% detection accuracy.*
4. Nanayakkara, C.L., et al. (2024). "Defending Cloud Web Applications using Machine Learning-Driven Triple Validation of IP Reputation by Integrating Security Operation Center." *Global Journal of Computer Science and Technology. Double-blind peer-reviewed; Wazuh SOC and MITRE ATT&CK integration.*

5. Nanayakkara, C.L., et al. (2024). "A Novel Framework for Real-Time IP Reputation Validation Using Artificial Intelligence." *MECS Press Journal. OpenAI generative models for AWS WAF threat intelligence.*
6. Nanayakkara, C.L., et al. (2024). "Comprehensive Understanding of Psychological Traits in Entrepreneurial Achievements Through Insights from the Strategic Way." *International Research Journal. Comparative analysis of entrepreneurial leadership traits.*
7. Nanayakkara, C.L., et al. (2023). "Enhancing Security in Database Grid Infrastructure for Storage Clusters." *WSEAS Transactions on Computers. Oracle Grid Infrastructure security with GlusterFS and OpenVPN.*

IEEE Conference Proceedings

8. Nanayakkara, C.L., et al. (2025). "Hybrid Supervised Machine Learning Driven Novel IP Reputation Validating Techniques for Cloud Firewalls." *IEEE. Ensemble RF / LR / SVM model for AWS cloud firewall IP reputation.*
9. Nanayakkara, C.L., et al. (2025). "Hybrid Machine Learning Approach for Enhanced Vulnerability Detection in Cloud Environments Using NIST and MITRE Frameworks." *IEEE. Integration of NIST and MITRE ATT&CK frameworks for cloud vulnerability detection.*
10. Nanayakkara, C.L., et al. (2025). "Hybrid Machine Learning and Moving Target Defense (MTD) for Comprehensive Switchport Attack Detection." *IEEE. Dynamic IP randomization with ML; evaluated on UNSW-NB15, KDD'Cup99, NSL-KDD.*
11. Nanayakkara, C.L., et al. (2024). "Validating IP Reputation in Cloud Firewall Systems Using Machine Learning Driven Signature Generation and Detection Techniques." *IEEE. AI and NLP-driven dynamic signature generation for AWS WAF.*
12. Nanayakkara, C.L., et al. (2025). "Bridging the Gap: Leveraging Emerging Technologies for Sustainable Development in the Global South." *Global Conference for Multidisciplinary Research (GCMR 2025). Achievers International Campus.*

Books & Book Chapters

13. Nanayakkara, C.L., et al. (2024). "Multidisciplinary Approaches in Artificial Intelligence." *Cambridge Scholars Publishing. Contributing author on AI applications in cybersecurity (authorship to be confirmed).*

ACADEMIC SERVICE & RECOGNITION

Conference Review & Programme Committees

- **IATMSI-2026:** Reviewer, 4th IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation, IEEE MP Section and ABV-IIITM Gwalior, March 2026.
- **16th ICCCNT 2025:** IEEE Conference Reviewer, IIT Indore (in association with the IEEE Electronics Packaging Society and AICTE), July 2025.
- **4th ICDCECE-2025:** Reviewer, IEEE Student Branch, Ballari Institute of Technology and Management, April 2025.
- **5th ICARC 2025:** Conference Reviewer, Sabaragamuwa University of Sri Lanka, February 2025.
- **6th icSoftComp 2024:** Technical Programme Committee Member and Reviewer, Springer Nature, December 2024.
- **9th ICATC 2024:** Main Author and Paper Presenter, University of Kelaniya, December 2024.

Awards & Certificates

- **Certificate of Excellence in Reviewing:** Asian Journal of Research in Computer Science, January 2025 (two separate awards; credential IDs PRAJRCOS130528N and PRAJRCOS130099NW).
- **SLTC Appreciation Certificate:** External Reviewer, International Research Conference 2024, Sri Lanka Technology Campus, February 2025.
- **IEEE SSITCON-2024:** Certificate of Appreciation as Peer Reviewer, Sri Siddhartha Institute of Technology and IEEE Bengaluru Section, October 2024.

TEACHING EXPERIENCE

Delivers research-informed postgraduate and undergraduate teaching across cybersecurity and computing. Modules delivered at university level include:

- **Incident Management and Response:** MSc (Level 7), University of Wolverhampton, UK.
- **Advanced Malware Analysis and Reverse Engineering:** MSc / BSc, University of Gloucestershire, UK.
- **Secure Software Systems Architecture:** MSc / BSc, University of Gloucestershire, UK.
- **ML-driven Malware Analysis; IoT Security and Intrusion Detection Systems:** University of Gloucestershire, UK.
- **Cloud Computing Security (AWS, Azure, GCP):** University of Gloucestershire, UK.
- **Cyber Warfare and Information Warfare; Blockchain and Applications:** BSc (Honours), SLTC Research University, Sri Lanka.
- **Cloud Security, Network Security and Authentication:** BSc (Honours), London Metropolitan University, UK.

PROFESSIONAL & INDUSTRY EXPERIENCE

Apr 2023 to Present

SECURITY ARCHITECT (GRC & AI RESEARCH)

Kerner Norland Ltd, Sri Lanka

Leads enterprise security architecture, GRC, and applied AI research for an international technology firm, reporting to the Global General Manager.

- **Risk reduction:** cut security incidents by 93% using proprietary ML/AI detection systems and reduced mean time to respond from four hours to 45 minutes through automated incident response.
- **Compliance:** achieved 100% compliance across ISO 27001, GDPR, PCI DSS, FedRAMP and NIST frameworks.
- **Technical innovation:** implemented Zero Trust Architecture across AWS, Azure and GCP and architected hybrid ML models (Random Forest, SVM, Linear Regression) for IP-reputation validation, integrated with AWS WAF and GuardDuty using Python, C# and Assembly.
- **Leadership:** built and led a security team across five geographic locations, authored the enterprise GRC policy framework, and delivered security briefings to C-suite and board members.

Feb 2021 to Apr 2023

SECURITY ARCHITECT (GRC)

BlackSwan Technologies Ltd, Israel

Led security architecture for an enterprise digital-transformation programme, reporting to the CISO.

- **Automation:** designed an automated penetration-testing engine that reduced testing time by 60%, and implemented the MITRE ATT&CK framework across SOC operations.
- **Project FORTRESS / SHIELD:** delivered an enterprise-wide Zero Trust implementation and an ML-driven threat-hunting platform processing over 1 TB of logs daily.
- **Project PHOENIX:** automated disaster recovery, reducing recovery time objective from 24 hours to 2 hours and ensuring 99.99% uptime for critical services.

May 2020 to Feb 2021

LEAD CONSULTANT — INFRASTRUCTURE & SECURITY

Virtusa Ltd, Sri Lanka (Manager Level)

Led a 15-member cross-functional team on the Vodafone ISP security-transformation programme, reporting to the Technical Director.

- **DevSecOps:** implemented a secure CI/CD pipeline using Jenkins, Git, Docker and Kubernetes, with SAST/DAST integration and container security scanning, reducing deployment vulnerabilities by 80%.
- **Identity management:** integrated WSO2 Identity Management with SSO/MFA for over 10,000 users across AWS services (EC2, EKS, Lambda, API Gateway, IAM).
- **Application security:** strengthened application security across the estate, reducing post-production issues by 65%.

Sep 2013 to May 2020

ICT CONSULTANT LEVEL 3 (IT MANAGER LEVEL)

Commercial Credit and Finance PLC, Sri Lanka

Managed the IT security budget and infrastructure portfolio for a major financial-services institution over six years, reporting to the Head of IT.

- **ERP and payments security:** hardened SAP/Oracle ERP serving over 5,000 users, secured 200+ ATMs through Python-based automated monitoring, and protected 500+ POS terminals across 100 branches.
- **Resilience:** led an Oracle Grid Infrastructure implementation and designed HA clustering and disaster recovery for 50+ applications, achieving 99.95% uptime with a 15-minute RPO and 2-hour RTO.
- **Monitoring and compliance:** deployed centralized SIEM log management processing 500 GB+ daily, an ESB message broker for secure inter-system communication, and unified auditing and backup solutions for regulatory compliance.

Sep 2007 to Jan 2010

SENIOR SYSTEM ENGINEER — CLOUD, SECURITY & LINUX

Globe Internet Ltd, Malawi

Architected nationwide ISP infrastructure for a major operator serving over 8,000 customers.

- **Networks:** deployed 4G LTE, WiMAX and SCDMA networks across three cities with a centralized wireless-management and security-monitoring system; led VSAT data communication and ESCOM fibre-optic training.
- **Cloud and storage:** implemented an OpenStack hybrid cloud and ultra-high-availability GlusterFS storage, with Oracle Grid Infrastructure for database clustering.
- **Security:** deployed IDS/IPS/ASA appliances in high availability and configured SOC/SIEM for centralized security monitoring.

Mar 2005 to Sep 2007

NETWORK SYSTEM ENGINEER

Enterprise Technology (Pvt) Ltd, Sri Lanka

Delivered enterprise infrastructure and security across Linux, network and fibre-optic projects.

- **Infrastructure:** administered RHEL/CentOS and Microsoft estates (Exchange, Active Directory, domain controllers) and managed VMware ESXi virtualization.
- **Network and security:** configured Cisco routers, switches, firewalls and VPNs with Nagios, Zenoss and NetFlow monitoring, OTDR fibre testing, and Bash automation.
- **Key projects:** key member of the SLPA Mega Port fibre-optic security project and the Dialog PLC call-centre rollout, and implemented the F-Secure enterprise gateway for Dialog Telekom.

Jan 2001
to Feb 2005

MARINE ELECTRONICS & TELECOMMUNICATION TECHNICIAN

Queens Radio Marine Electronics (Pvt) Ltd, Sri Lanka

Maintained electronics and communication systems aboard high-speed crafts and deep seagoing vessels.

- Specialized in marine navigation and satellite communication systems.
- Installed and serviced auto-pilot, safety and defense systems.

CERTIFICATIONS & MEMBERSHIPS

- **Member, British Computer Society (MBCS):** Professional Membership in Cyber Security in BCS, The Chartered Institute for IT; membership ID 995007328, issued May 2018, valid through 2027.
- **Red Hat Certified Engineer (RHCE):** trained in enterprise Linux systems administration.
- **Advanced Engineering Diploma:** Electronics and Telecommunications in City & Guilds of London Institute, 2005.
- **Engineering & Hardware Diplomas:** Engineering Diploma, City & Guilds of London Institute (2003); and Hardware Engineering Diploma (2003).
- **Network Engineering & Data Centre Design:** certified, Enterprise Technology, 2005.
- **Intelligent Robotics:** certified, IIT Campus, 2006.
- **Digital Satellite & Data Communications:** industry certifications, 2005.
- **National Competence in Electronics:** licensed, NAITA, 2001.
- **Wing Chun Martial Art:** 6th-Level Practitioner, International Wushu Federation, 1998.

TECHNICAL & PROFESSIONAL SKILLS

- **Programming and automation:** Python (expert), C#, Assembly, Shell/Bash (expert), and SQL in applied to ML/AI, security tooling, automation, and reverse engineering.
- **Cybersecurity and cloud:** Security architecture, SOC operations, SIEM/EDR, Zero Trust, and multi-cloud security across AWS, Azure, and GCP.
- **Frameworks and compliance:** ISO 27001, NIST, PCI DSS, GDPR, FedRAMP, and MITRE ATT&CK.
- **Academic and professional:** Curriculum design, research supervision, technical writing as a published author, and international conference presentation.

LANGUAGES

- **English:** full professional proficiency.
- **Sinhala:** native proficiency.

CAREER OBJECTIVES

- **In security architecture:** *to architect next-generation security solutions that seamlessly integrate cutting-edge ML/AI technologies with proven security frameworks, creating resilient, scalable, and cost-effective defence systems.*
- **In academia:** *to bridge the academia–industry gap by developing practical, research-driven curricula that prepare the next generation of security leaders for real-world challenges, while contributing to the global body of cybersecurity knowledge.*

REFERENCES

Prof. Ruvan Abeysekara
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Director, VSIS Information (Pvt) Ltd
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DECLARATION

I hereby declare that all information provided in this curriculum vitae is true and accurate to the best of my knowledge.