NETHMA KALPANI

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🔗 researchgate.net/profile/Nethma-Kalpani   📍 Hambanthota, Sri Lanka

EXPERIENCE

Demonstrator
SLTC Research University

📅 08/2025 - Present   📍 Padukka, Sri Lanka

As a Demonstrator at SLTC, I conduct laboratory practicals and tutorial sessions for the BAIT degree program under the Faculty of Computing and IT. Through guiding students in applying theoretical knowledge to practical exercises, I have strengthened my teaching skills, subject expertise, and ability to effectively support diverse learning needs. This academic role has further deepened my academic engagement and prepared me for future academic positions.

Software Engineer Intern
WIDYA Lanka 0880 (Private) Limited, Australia

📅 03/2025 - 07/2025   📍 Remote

As a Software Engineer Intern at Widya, I contributed to software development and research oriented projects under the guidance of Professor Athula Ginige. Alongside industry exposure, my involvement in research tasks helped bridge practical skills with academic insights, preparing me for the academic field. This experience strengthened both my technical expertise and ability to work in diverse professional environments.

Volunteer ICT teacher
Thalawa National School

📅 07/2020 - 02/2021   📍 Hambanthota, Sri Lanka

Volunteered as an ICT teacher for Grade 10 and 11 students. Delivered engaging and comprehensive lessons, adapted teaching methods to diverse learning needs, and provided guidance to support students' academic growth. This experience enhanced my teaching skills, communication abilities, and built a strong foundation for future academic roles.

EDUCATION

Bachelor of Science Honors in Computer Science and Technology
Uva Wellassa University of Sri Lanka

📅 09/2021 - 09/2025   📍 Badulla, Sri Lanka

CGPA
3.93 / 4.00

G.C.E. Advanced Level
H/Weeraketiya Rajapaksha Central College

📅 01/2017 - 08/2019   📍 Weeraketiya, Sri Lanka
- 1B & 2C's (Biological Sciences Stream)

G.C.E. Ordinary Level
H/Weeraketiya Rajapaksha Central College

📅 01/2011 - 12/2016   📍 Weeraketiya, Sri Lanka
- 8A's & 1B

SUMMARY

I am a passionate computer science enthusiast with a strong commitment to continuous academic growth and research. With a keen interest in machine learning, deep learning and software engineering, I actively seek opportunities to expand my skills while strengthening my existing knowledge. I bring strong problem solving abilities and a logical, systematic approach to complex challenges. My main goal is to contribute meaningfully to academic and research initiatives, support effective student learning, and help deliver high quality results that align with the advancement of knowledge in modern technologies.

RESEARCH PROJECT

Network Intrusion Detection with Ensemble Learning of Reproducible Deep Learning and Reinforcement Learning Models

📅 10/2024 - 09/2025
📍 Uva Wellassa University of Sri Lanka

Deep Learning, Reinforcement Learning, Ensemble Learning

- **Developed an ensemble learning framework** integrating reproducible deep learning and reinforcement learning models for advanced network intrusion detection.
- **Improved detection accuracy by fine-tuning model** parameters through hyperparameter optimization and combining multiple models using stacking techniques for enhanced performance.
- **Analyzed state of the art of deep learning and reinforcement learning methods** for network security applications, focusing on performance metrics including precision, recall, F1 score, and ROC curves.

TECHNOLOGIES

HTML	CSS	Python	Java
JavaScript	PHP	C	LaTeX
Bootstrap	React.js	Django	
MySQL	Figma	Canva	Git

JOURNAL PUBLICATIONS

Resilient cybersecurity: ensemble deep learning and reinforcement learning for Next-Gen IDS

📅 01/2026

🔗 https://doi.org/10.1007/s42044-025-00364-3

Iran Journal of Computer Science | Springer Nature

Securing industry 4.0: a systematic review of AI-driven intrusion detection approaches and emerging trends

📅 12/2025

🔗 https://doi.org/10.1007/s40860-025-00264-0

Journal of Reliable Intelligent Environments | Springer Nature

Cutting-edge approaches in intrusion detection systems: a systematic review of deep learning, reinforcement learning, and ensemble techniques

📅 03/2025

🔗 https://doi.org/10.1007/s42044-025-00246-8

Iran Journal of Computer Science | Springer Nature

CONFERENCE PUBLICATIONS (FULL PAPERS)

Enhancing Network Intrusion Detection with Stacked Deep and Reinforcement Learning Models

📅 04/2025 📍 University of Kelaniya, Sri Lanka

🔗 https://doi.org/10.1109/SCSE65633.2025.11031023

8th International Research Conference on SCSE | IEEE Xplore

- Serving as the presenting author.

CONFERENCE PUBLICATIONS (ABSTRACTS)

Uncovering Hidden Attack Pathways: Graph-Based Intrusion Detection with Dynamic Behavioral Context in Network Environments

📅 06/2025 📍 South Eastern University of Sri Lanka

14th Annual International Research Conference (AiRC2025)

- Serving as the presenting author.

AI-Powered Intrusion Detection for Industry 4.0: A Comprehensive Systematic Review of Methods, Challenges, and Future Directions

📅 06/2025 📍 Uva Wellassa University of Sri Lanka

14th Annual International Research Conference (AiRC2025)

- Serving as the presenting author.

VOLUNTEERING

LaTeX Contributor for IRCUWU2024 and IRCUWU2025 Conference Proceedings

Uva Wellassa University of Sri Lanka

Supported the creation of IRCUWU2024 and IRCUWU2025 conference proceedings using LaTeX, following a template to format and integrate research content efficiently. This training ensured consistency and professionalism, enhancing my documentation skills, teamwork, and attention to detail for the academic community.

KEY ACHIEVEMENTS

Finalist | IEEE Innovation Nation Sri Lanka Business Stage 2024

Selected as national top 10 finalist for Wildlife Circle Web Application in INSL 2024.

Dean's List for Outstanding Academic Performance

Consistently achieved Dean's List for every semester throughout 1st Year to 4th Year.

CERTIFICATES

Advanced Certificate in English Language

National Institute of Business Management (NIBM), Sri Lanka

Certificate in Computer Science

National Institute of Business Management (NIBM), Sri Lanka

Moodle Teaching Basics program and certificate

Moodle Academy (Educator programs)

🔗 https://tinyurl.com/moodleacademybadgeNK

LANGUAGES

English
Proficient
● ● ● ● ○

Sinhala
Native
● ● ● ● ●

REFERENCES

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