Hirusha Wanigasingha

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Date of the CV: 14.05.2026

1 Objective

My primary aspiration is to deepen my expertise and contribute to cutting-edge research in the fields of Data Science and Artificial Intelligence. With a strong foundation in Computer Science and hands-on experience in developing machine learning models, I am driven to create scalable, intelligent systems capable of processing complex and dynamic datasets. My research interests include Bioinformatics, Nature-Inspired Algorithms, Machine Learning, Natural Language Processing, Computer Vision, Sports Analytics, and broader AI applications. I am enthusiastic about collaborating with academic and industry partners to drive impactful, data-driven innovations that address real-world challenges.

2 Academic Qualification

2025 – Present **M.Phil. in Computer Science**
University of Sri Jayewardenepura, Sri Lanka.
A two-year postgraduate research degree program, focused on advanced research and thesis-based study.

2020 – 2024 **Bachelor of Science (Honors) in Computer Science**
University of Sri Jayewardenepura, Sri Lanka.
Four year full-time degree with research component. Completed with Second Class - Upper division. (GPA: 3.63/4.0)
Major: Computer Science
Minor: Mathematics, Statistics
Dissertation: Optimizing Feature Selection in Spam Email Detection using a Co-evolutionary Algorithm
Supervisor: Prof. T.G.I. Fernando

2026 – Present **Certificate in Teaching in Higher Education (CTHE)**
University of Sri Jayewardenepura, Sri Lanka.
A professional academic development program designed to enhance teaching, assessment, curriculum development, and learner-centered instructional skills in higher education.

2025 **Certificate Course on Research Methodology & Scientific Writing**
University of Sri Jayewardenepura, Sri Lanka.
A short-term academic training program focused on research design, literature review, data analysis, academic ethics, and scientific writing skills for conducting and publishing quality research.

3 Special Awards, Achievements & Honors

- **Best Researcher Award- 2nd Runners up (Undergraduate Category - 2024)**
  Institute of Applied Statistics, Sri Lanka (IASSL) - Best Research Awards 2024
  Awarded in recognition of excellence and innovation in undergraduate research with significant contributions to applied statistics and interdisciplinary scientific studies.

- **Finnovation Lab Training Programme Participant (2025)**
  Selected and participated in the first-ever Finnovation Lab training programme, part of the Sri Lanka FinTech Summit 2025 (02nd September 2025). Received a two-day pass (valued at LKR 45,000) to attend the Sri Lanka FinTech Summit 2025 on 24th–25th September 2025.

- **Finalist - "I am a Researcher 2024" Competition**
  International Conference on Advances in ICT for Emerging Regions (ICTER), Marino Beach Hotel, Colombo, Sri Lanka.
  Awarded a two-day conference pass worth 30,000 LKR and finalist recognition November 2024.

- **Finalist - "I am a Researcher 2023" Competition**
  International Conference on Advances in ICT for Emerging Regions (ICTER), University of Colombo School of Computing, Colombo, Sri Lanka.
  Awarded a two-day conference pass worth 30,000 LKR and finalist recognition November 2023.

4 Research Publication

Journal Publication

- **Wanigasingha, N.H.**, HGL Harshini, MKA Ariyaratne, TGI Fernando, U. Dikwatta, and U.S. Samarasinghe. "GI Meets AI: Glycemic Index in the Age of AI, Computational Breakthroughs". Future Technology 5, no. 1 (October 26, 2025): 93–126. Accessed October 27, 2025.
  DOI: https://fupubco.com/futech/article/view/526.
  Q3 Journal | SJR (2025): 0.272 | H-Index: 9

- Deepal, D. A. A., **Wanigasingha, N. H.**, Ariyaratne, M. K. A., and De Silva, P. R. S., "Optimizing human-robot interaction: An analysis of robot action effectiveness in different spatial regions," Vidyodaya Journal of Science, vol. 28, no. 2, 2025.
  DOI: *https://doi.org/10.31357/vjs.v28i02.8746*

Journal Papers in Review

- **Wanigasingha, N. H.**, Ariyaratne, M. K. A., & Silva, R. M. (2026). VolliQ: A Multi-view Volleyball Player Detection Dataset for Deep Learning and Match Analytics. Submitted to *Data in Brief, an Elsevier journal indexed in Scopus and Web of Science.*
  Q1 Journal | SJR (2025): 0.606 | H-Index: 69

- **Wanigasingha, N. H.**, Ariyaratne, M. K. A., & Silva, R. M. (2026). Vision in Sports: A Comprehensive Survey on Object Detection and Tracking. Submitted to *Artificial Intelligence Review, a Springer journal indexed in Scopus and Web of Science.*
  Q1 Journal | SJR (2025): 3.638 | H-Index: 169

- **Wanigasingha, N. H.**, Egodage, S. S., Ariyaratne, M. K. A., & De Silva, P. R. S. (2025). SerendibCoins: Exploring Sri Lankan Coins Dataset. Submitted to *Electronic Letters on Computer Vision and Image Analysis, a journal indexed in Scopus and Web of Science Emerging Sources Citation Index (ESCI).*
  Q3 Journal | SJR (2025): 0.272 | H-Index: 16

- Wijayarathne, T. A. I. H., Ariyaratne, M. K. A., and **Wanigasingha, N. H.**,(2026) "Learning to Route: An Application of Neural Combinatorial Optimization for Capacitated Vehicle Routing with Pickups and Deliveries," Submitted to *IEEE Access.*
  Q1 Journal | SJR (2025): 0.884 | H-Index: 338

- Katheesan, K., Ariyaratne, M. K. A., **Wanigasingha, N. H.**, & De Silva, P. H. H. P. N. (2026). Genetic Algorithm Based Cut Order Plan and Cut-Panel Nesting Optimization for Apparel Industry. Submitted to *Intelligent Computing, a journal indexed in Scopus.*
  Q1 Journal | SJR (2025): 1.006 | H-Index: 16

- Piyasinghe, T.M.U.K., **Wanigasingha, N. H.**, & Ariyaratne, M. K. A. (2026). "Flood Forecasting in Sri Lanka: A Systematic Review of Machine and Deep Learning Approaches (2019–2025)". Submitted to *KDU Journal of Multidisciplinary Studies, a peer-reviewed journal published by General Sir John Kotelawala Defence University, Sri Lanka.*

Journal Papers in Working Progress

- **2024** - **Present**: Research Projects: Computer Vision based Volleyball Analytics

  This project focuses on volleyball analysis using the YOLO model for object detection. It involves developing a deep learning-based tracking system to accurately identify players and ball movement in volleyball matches. The study integrates computer vision techniques to analyze player formations, tactical strategies, and movement patterns.
  Supervisors: Dr. M.K.A. Ariyaratne, Dr. Rajitha M. Silva

- **2026** - **Present**: Systematic Review on Health Wearable Devices: Conducting a comprehensive review paper on the applications of health wearable devices for monitoring, prediction, and analytics. The study explores the integration of wearable sensor data with machine learning and deep learning techniques to address challenges in healthcare, such as early disease detection, personalized health monitoring, and activity recognition.
  Team Members: Prof. T. G. I. Fernando, Dr. M. K. A. Ariyaratne, **N.H. Wanigasingha**, *S.A.M.P. Udeshika, U.S. Samarasinghe, U.C. Wickramaratne and J.M.P.G. Jayawickrama*

- **2025** - **Present**: Coevolutionary Algorithms for Hyperparameter Optimization of ML Models: focus on optimizing machine learning hyperparameters by evolving multiple interacting populations simultaneously. Instead of tuning all hyperparameters in a single search space, coevolution divides them into subcomponents (e.g., model parameters, feature-related settings, or learning strategies) that evolve together and influence each other's performance.
  Team Members: H.M.K. Nithyanjalee , **N.H. Wanigasingha**, *and M.K.A. Ariyaratne*

- **2026** - **Present**: SeaQNet: a machine learning-based framework designed for predicting the harvest potential of Holothuria scabra (commonly known as sea cucumber). It integrates data-driven models to analyze environmental and biological factors affecting growth and yield, helping improve aquaculture planning and sustainable harvesting decisions.
  Team Members: N.M.S. Jayasekara, **N.H. Wanigasingha**, *M.K.A. Ariyaratne, and D.C.T. Dissanayake*

Book Chapters

- T. G. I. Fernando, M. K. A. Ariyaratne, W. M. K. S. Ilmini, **N. H. Wanigasingha**, W. G. L. Harshani, S. A. M. P. Udeshika, J. M. P. G. Jayawickrama, and U. C. Wickramaratne, *"Ethics, Safety and Intellectual Property in the Use of LLM Applications"*, in "Talk to AI Like a Pro (Sinhala Book)", Chapter 6, Sarasavi Publishers, Sri Lanka, under print.

Conference Proceedings

- **Wanigasingha, N. H.**, & Fernando, T. G. I. (2024). Optimizing Feature Selection in Spam Email Detection Using Co-Evolutionary Algorithms. In *Proceedings of the 8th SLAAI International Conference on Artificial Intelligence (SLAAI-ICAI)*, Ratmalana, Sri Lanka, pp. 1–6. Published by IEEE. DOI: *10.1109/SLAAI-ICAI63667.2024.10844981*

- Dasunika, A. D. H., **Wanigasingha, N. H.**, Samarasinghe, U., & Ariyaratne, M. K. A. (2025). A Comparative Study on Nature-Inspired Algorithms Finding Optimal Policies in Reinforcement Learning. In *Proceedings of the 9th SLAAI International Conference on Artificial Intelligence (SLAAI-ICAI)*, The Open University of Sri Lanka, Nawala, Sri Lanka. Published by IEEE. DOI: *10.1109/SLAAI-ICAI68534.2025.11318451*

- Gunaratne, U. B. R. A., Illangarathna, A. N. L., Praveen, E. D. C., **Wanigasingha, N. H.**, Silva, B. N., & Wijenayake, U. (2026). Augmented Reality Based Simulator for Custom Made Garments. In proceedings of the 06th International Conference on Advanced Research in Computing.Publish by IEEE. DOI: *https://doi.org/10.1109/ICARC68737.2026.11453617*

Conference Papers Accepted

- E. S. Sithpahan, **N. H. Wanigasingha,** M. K. A. Ariyaratne, and P. R. S. De Silva, "Interactive Money Saver: A Digital Till to Enhance Money Saving Interests of Children," accepted for presentation at the International Conference on Technological Intelligence and Business Strategies (TIBS 2026), 22–24 June 2026, Manila, Philippines.

Preprints & Archives

- Katheesan, K., Ariyaratne, M. K. A., **Wanigasingha, N. H.**, & De Silva, P. H. H. P. N. (2025). Genetic Algorithm Based Cut Order Plan and Cut-Panel Nesting Optimization for Apparel Industry. *Journal of University of Bahrain*.
  Link: *https://hdl.handle.net/20.500.14536/6238*

- **Wanigasingha, N. H.**, Egodage, S. S., Ariyaratne, M. K. A., & De Silva, P. R. S. (2025). SerendibCoins: Exploring Sri Lankan Coins Dataset. *arXiv preprint*.
  DOI: *https://doi.org/10.48550/arXiv.2505.18634*

Abstract Publications

- **Wanigasingha, N. H.**, Ariyaratne, M. K. A., and Silva, R. M., "Computer vision - based volleyball analytics," presented at the Inst. Sports Medicine Research Symp., Sri Lanka, Nov. 2025.

- **Wanigasingha, N. H.** and Fernando, T. G. I., "Optimizing feature selection in spam email detection using co-evolutionary algorithms," in Proc. Awarding Ceremony and 13th Annu. Gen. Meeting IASSL, Colombo, Sri Lanka, Apr. 2025, p. 6.

5 Academic and Professional Experience

Employment Records - Academics

Feb 2026 – Present **Lecturer - Probationary**,
Department of Computer Science, Faculty of Applied Sciences, University of Sri Jayewardenepura, Sri Lanka.
Subjects Taught: Object Oriented Programming, Introduction to Artificial Intelligence, and DevOps Engineering & Practices.

Mar 2025 – Feb 2026 **Lecturer (On Contract Basis),**
Department of Computer Science, Faculty of Applied Sciences, University of Sri Jayewardenepura, Sri Lanka.
Subjects Taught: Introduction to AI, Database Systems & Administration, Intelligent Systems (Practical), Software Quality Assurance, Software Project Management and Process Design, and Seminar.

Oct 2025 – Present **Visiting Lecturer,**
National Institute of Business Management (NIBM), Sri Lanka.
Subjects Taught: Statistics for Data Science, Python, and R Programming.

Nov 2024 – Present **Visiting Instructor,**
Faculty of Graduate Studies, University of Sri Jayewardenepura, Sri Lanka.
Main Tasks: Conducting practical sessions for courses including Artificial Intelligence, Knowledge Representation, Intelligent Systems, Programming for Data Science, and AI Planning.

Mar 2025 – July 2025 **Visiting Lecturer,**
IDM Nations Campus International, Sri Lanka.
Subjects Taught: Learning Machines and Intelligent Agents.

Aug 2024 – Feb 2025 **Teaching Assistantship,**
Department of Computer Science, University of Sri Jayewardenepura, Sri Lanka.
Main Tasks: Conducting practical classes, supervising undergraduate students, grading laboratory reports, and conducting workshops related to C, Java, Database Management Systems, Knowledge Representation, and Intelligent Systems.

Employment Records - Industry

Feb 2024 – Aug 2024 **Machine Learning Engineer (Internship),**
Group of Analytics & AI, Dialog Axiata PLC, Colombo, Sri Lanka.
Main Tasks: Developed end-to-end machine learning pipelines using Amazon SageMaker, ensuring scalable and efficient model training. Created an MLOps CI/CD template to automate the machine learning lifecycle, integrating continuous integration and deployment processes.
Tech Stack: Python, AWS Services (SageMaker, S3, Service Catalog, IAM), CI/CD Architecture, Keras, Scikit-learn, Git

Administrative Experiences

Jan 2025 – Present **Coordinator Assistant,**
M.Sc. Data Science & Artificial Intelligence, Faculty of Graduate Studies, University of Sri Jayewardenepura, Sri Lanka.
Main Tasks: Assisted in coordinating the M.Sc. Data Science & AI program including scheduling and communication with students and faculty; monitored student progress, attendance, and academic records to ensure program compliance and quality standards; facilitated communication between students, faculty, and administrative staff to resolve academic and administrative queries; managed social media accounts by planning, creating, scheduling, and monitoring content across platforms.

Nov 2025 – Present **Council Member,**
AI Popularization Committee, Sri Lanka Association for Artificial Intelligence (SLAAI).
Main Tasks: Contributed to strategic planning and decision-making to promote awareness and adoption of artificial intelligence; organized outreach programs, workshops, and public initiatives while supporting ethical and responsible AI practices; collaborated with academics, industry professionals, and the community to make AI concepts accessible to a wider audience; managed social media accounts by planning, creating, scheduling, and monitoring content across platforms.

Membership

- **Council Member**, Sri Lanka Association of Artificial Intelligence (SLAAI).
- **Member**, Institute of Electrical and Electronics Engineers (IEEE).
- **Affiliate Member**, Organization for Women in Science for the Developing World (OWSD).
- **Toastmaster**, Toastmaster International, Lyceum Toastmasters Club, Nugegoda.

6 Personal Information

- **Full Name:** Nethni Hirusha Wanigasingha
- **Permanent Address:** No. 166, Pragathipura, Madiwela, Kotte, Sri Lanka.
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- **Email:** hirushanethni2277@gmail.com, hirushanethni@sjp.ac.lk
- **Date of Birth:** 11th October 1999
- **Website:** hirushawanigasingha.com
- **Professional Platforms:**
  - **ORCID ID:** 0009-0008-2050-9273
  - **Google Scholar**
  - **LinkedIn**
  - **GitHub**

7 Additional Activities

- **Reviewer**
  - IEEE World Congress on Computational Intelligence (WCCI) 2026.
  - International Conference on Machine Learning (ICML 2026) is organized by the International Machine Learning Society (IMLS).
  - The 1st Jayewardenepura Computing Symposium (JCoS 2026), organized by the Faculty of Computing, University of Sri Jayewardenepura.
  - International Conference on Multidisciplinary Approaches (iCMA 2026), organized by the Faculty of Graduate Studies (FGS) of the University of Sri Jayewardenepura.
- **Session Co-chair** - 9th SLAAI International Conference on Artificial Intelligence (SLAAI-ICAI) 2025.
- **Editor** - Astronomy Club, University of Sri Jayewardenepura, Sri Lanka. (2022-2023)
- **Volunteering experience** - 306 C2 Leo Club, University of Sri Jayewardenepura. (2020-2024)
- **Graphic Designer** - J'pura Flames, University of Sri Jayewardenepura, Sri Lanka. (2022-2024)
- **Graphic Designer** - Aviation Club, University of Sri Jayewardenepura, Sri Lanka. (2022 - 2023)

8 References

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I do certify the above facts are true and accurate to the best of my knowledge.