K.T. Yasas Mahima, Ph.D. (Reading)

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Employment History

May 2024 - Apr. 2025	**AI and Computer Vision Research Consultant.** University of Southern Queensland (UniSQ), Brisbane, QLD, Australia. Collaborated with Robotic and Autonomous Systems Implementation & Coordination Office (RICO), Australian Army.
Jan. 2022 - Apr. 2023	**Research Assistant in Computer Vision.** University of Colombo School of Computing, Sri Lanka. Collaborated with KTH Royal Institute of Technology, Uppsala University, and RISE Sweden.
Nov. 2022 - Apr. 2025	**Visiting Lecturer and Project Supervisor.** Informatics Institute of Technology (IIT), Sri Lanka, affiliated with the University of Westminster, UK.
Jul. 2021 - Oct. 2022	**Undergraduate Software Engineering Research Fellow.** SEAD Research Group, The Open University, UK.
Jul. 2020 - Jul. 2021	**Trainee Associate Big Data and Data Science Engineer.** Zone 24x7 Inc, Sri Lanka (Headquartered in San Jose, California, USA.)
Jun. 2019 - Oct. 2019	**Trainee Associate Software Engineer.** RevportX, Sri Lanka.

Education

2023 – 2027	**Ph.D. in Electrical Engineering**: University of New South Wales (UNSW), Australia. Thesis title: *Robust 3D Perception for Autonomous Vehicles Against Adversarial Attacks and Common Corruptions.*
2018 – 2022	**B.Eng (Hons) in Software Engineering**: University of Westminster, UK. (Studied at Informatics Institute of Technology, Sri Lanka). Awards: *Batch Topper and Best Final Year Research Project.*

Research Publications

Journal Articles

1. K. T. Y. Mahima, A. G. Perera, S. Anavatti, and M. Garratt, "FlowCraft: Unveiling Adversarial Robustness of LiDAR Scene Flow Estimation," *Pattern Recognition Letters*, vol. 191, pp. 37–43, 2025.

2. K. T. Y. Mahima, A. G. Perera, S. Anavatti, and M. Garratt, "Toward robust 3D perception for autonomous vehicles: A review of adversarial attacks and countermeasures," *IEEE Transactions on Intelligent Transportation Systems*, 2024.

3. A. Pramodya, K. Mahima, R. Pushpananda, and R. Weerasinghe, "Enhancing Neural Machine Translation for the Sinhala-Tamil language pair with limited resources," *International Journal on Advances in ICT for Emerging Regions (ICTer)*, vol. 17, no. 1, 2024.

4. K. T. Y. Mahima, A. Perera, S. Anavatti, and M. Garratt, "Exploring Adversarial Robustness of LiDAR Semantic Segmentation in Autonomous Driving," *Sensors*, vol. 23, no. 23, p. 9579, 2023.

5. K. T. Y. Mahima, T. Ginige, and K. De Zoysa, "Evaluation of Sentiment Analysis based on AutoML and Traditional Approaches," *International Journal of Advanced Computer Science and Applications*, vol. 12, no. 2, 2021.

6 K. T. Y. Mahima, M. Ayoob, and G. Poravi, "Adversarial Attacks and Defense Technologies on Autonomous Vehicles: A Review," *Applied Computer Systems*, vol. 26, no. 2, pp. 96–106, Dec. 2021.

Conference Proceedings

1 K. T. Y. Mahima, A. G. Perera, S. Anavatti, and M. Garratt, "3DR-DIFF: Blind Diffusion Inpainting for 3D Point Cloud Reconstruction and Segmentation," in *2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, IEEE, 2024, pp. 7414–7421.

2 R. Walgama and K. T. Y. Mahima, "FL-CycleGAN: Enhancing Mobile Photography with Federated Learning-Enabled CycleGAN," in *2024 Moratuwa Engineering Research Conference (MERCon)*, IEEE, 2024, pp. 688–693.

3 Q. Shen, K. T. Y. Mahima, K. De Zoysa, L. Mottola, T. Voigt, and M. Flierl, "CNN-Based Estimation of Water Depth from Multispectral Drone Imagery for Mosquito Control," in *2023 IEEE International Conference on Image Processing (ICIP)*, IEEE, 2023, pp. 3250–3254.

4 K. T. Y. Mahima, M. Weerasekara, K. De Zoysa, *et al.*, "Fighting Dengue Fever with Aerial Drones," in *International Conference on Embedded Wireless Systems and Networks (EWSN), Linz, Austria, 3-5 October 2022*, Association for Computing Machinery (ACM), 2022, pp. 206–207.

5 K. T. Y. Mahima, M. Weerasekara, K. D. Zoysa, *et al.*, "MM4Drone: A Multi-spectral Image and mmwave Radar Approach for Identifying Mosquito Breeding Grounds via Aerial Drones," in *International Conference on Pervasive Computing Technologies for Healthcare*, Springer, 2022, pp. 412–426.

6 K. T. Y. Mahima, M. Ayoob, and G. Poravi, "An Assessment of Robustness for Adversarial Attacks and Physical Distortions on Image Classification using Explainable AI," in *AI-Cybersec@SGAI*, 2021.

7 K. T. Y. Mahima, R. Abeygunawardana, and T. Ginige, "Dynamic Traffic Light Controlling System Using Google Maps and IoT," in *2020 From Innovation to Impact (FITI)*, IEEE, vol. 1, 2020, pp. 1–5.

8 K. T. Y. Mahima and T. Ginige, "Graph and Natural Language Processing Based Recommendation System for Choosing Machine Learning Algorithms," in *2020 12th International Conference on Advanced Infocomm Technology (ICAIT)*, IEEE, 2020, pp. 119–123.

Manuscripts Under Review

1 K. T. Y. Mahima, A. G. Perera, S. Anavatti, and M. Garratt, *FlowInject: A Security Analysis of Spoofed Point Injection Attacks against LiDAR Scene Flow Estimation*, Submitted to: IEEE Transactions on Intelligent Vehicles (T-IV).

🔖 **Check my full publication list on Google Scholar** 🎓

Skills

Coding	🔖	Python, Java, Scala, JavaScript, PHP, Bash
AI and Computer Vision	🔖	Pytorch, Tensorflow, Scikit-learn, OpenCV, Generative Networks (GANs, Diffusions & VAEs), Open3D, WanDB, Hugging Face.
Data Engineering	🔖	MySQL, SQL-Server, MongoDB, Apache ecosystem (e.g., Hadoop, Kafka, Hive, etc.)
Web Development and Rest APIs	🔖	HTML, CSS, Django, Flask, NodeJS, SpringBoot, Angular
Version controlling and Testing.	🔖	Git, JUnit, PyUnit
Other Skills	🔖	Documentation Skills (LaTeX), Teaching, Fast-learner, Critical Thinking, Leadership, Work Ethic

Miscellaneous Experience

Awards and Achievements

2025   **UNSW-NCI High Performance Computing Allocation Grant**: Received 100 high performance computing units at NCI Australia.

2024   **Best Research Paper** : Computer Vision track, 10th MERCon International Conference.

      Australian Department of Defence Grant: Received 50K AUD for a project in computer vision and AI.

      UNSW DRTG Grant: Received 3K AUD from UNSW for conference travel.

2022   **UNSW Tuition Fee Scholarship**: Received a full scholarship (Tuition fee+living expenses) for a PhD from UNSW Australia.

      Merit Award: NBQSA National ICT Awards 2022, Sri Lanka.

      Best final year project : Awarded by Circles.Life Singapore for an outstanding final-year research project.

      Gold Medal : Dr. Gamini Wickramasinghe Gold Medal for Academic Excellence – Batch Top, B.Eng (Hons) in Software Engineering.

Certification

2023   **Graduate Teaching and Training Program**. Awarded by UNSW Canberra.

2020   **Advanced Data Science with IBM**. Awarded by IBM on Coursera.

      Big Data Specialization. Awarded by the University of California, San Diego on Coursera.

Professional Services

N/A   **Article Reviewer**. Review articles on topics related to computer vision, deep learning, adversarial robustness, and autonomous vehicles in *IEEE Sensors, IEEE TAI, IEEE T-ITS, IEEE TETCI, IEEE CJECE, IEEE Vehicular Technology Magazine, Springer Nature Scientific Reports, International Journal of Machine Learning and Cybernetics, Discover Artificial Intelligence, The Journal of Supercomputing, International Journal of Intelligent Robotics and Applications, and Behaviour & Information Technology*

2023   **IEEE Region 10 Symposium (TENSYMP) 2023**. Organizing Committee.

References

Prof. Matt Garratt
Professor & Deputy Director at UNSW.AI
University of New South Wales,
Canberra, Australia.
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Dr. Asanka Perera
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Brisbane, Australia.
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