KAVISHA VIDANAPATHIRANA

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EDUCATION

PhD. Computer Vision and Robotics *Jan 2020 - Oct 2024*
Queensland University of Technology (QUT) in collaboration with CSIRO Robotics.
Thesis topic: *Geometric Constraints for 3D Data Association.*

BSc. Eng. (Hons.) Electronic and Telecommunication Engineering *Oct 2014 - Dec 2018*
University of Moratuwa, Sri Lanka First Class

PROFESSIONAL EXPERIENCE

Visiting Researcher *Oct 2024 - Present*
The Australian Institute for Machine Learning (AIML)
Research Assistant
Queesnland University of Technology (QUT)

Research Intern *Jan - Sep 2024*
The Australian Institute for Machine Learning (AIML)
- Research on implicit neural representations for spatio-temporal signals.

Research Intern *Oct 2022 - May 2023*
The Australian Institute for Machine Learning (AIML)
- Research on multi-object tracking and scene flow.

Lecturer (Sessional) *Jul 2019 - Jan 2020*
Department of Electronic & Telecommunication Engineering, University of Moratuwa
- Lecturer: EN1802 Basic Electronics. - TA: EN4593 Autonomous Systems

Instructor *Feb - Jul 2019*
Department of Electronic & Telecommunication Engineering, University of Moratuwa
- TA: EN4563 Robotics, EN2523 Robot Design and Competition, EN2090 Laboratory Practice - II

Trainee Associate Electronics Engineer *Jun - Dec 2017*
Zone24x7 Pvt. Ltd.
- Research on path planning in retail store environments for an autonomous inventory tracking robot.

AWARDS

- ICRA 2022 - 2nd place in the General Place Recognition Competition organized by AirLab, Carnegie Mellon University. Invited talk.
- CSIRO Data61 PhD Top-Up Scholarship 2020
- High Distinction - Sri Lanka Mathematical Olympiad 2012

TECHNICAL SKILLS & COMPETENCIES

Programming	python, C++, Matlab
Libraries & tools	pytorch, tensorflow, ROS
Research Experience	3D Vision: *representation learning, scene flow, tracking, segmentation.* Machine Learning: *design of architectures, loss functions, benchmarks. Implicit neural representations. Transformer networks.* Mobile robotics (harware+software): *metric localization, path planning.*

STANDARDIZED TESTS

- GRE General Test: VR: 160, QR: 168, AW: 5.0 (August 2019)
- IELTS Academic: 8.5 Overall, CEFR Level C2 (February 2024)

PUBLICATION LIST

- **K. Vidanapathirana***, J. Knights*, S. Hausler*, M. Cox, M. Ramezani, J. Jooste, E. Griffiths, S. Mohamed, S. Sridharan, C. Fookes, P. Moghadam. 'WildScenes: A benchmark for 2D and 3D semantic segmentation in large-scale natural environments', *The International Journal of Robotics Research* ***(IJRR)***. *Equal contribution. (publication, project page)
- **K. Vidanapathirana**, S. Ch'ng, X. Li, S. Lucey. 'Multi-Body Neural Scene Flow', *2024 International Conference on 3D Vision* ***(3DV) (Oral - top 6.6%)***. (publication, project page)
- **K. Vidanapathirana**, P. Moghadam, S. Sridharan, C. Fookes. 'Spectral Geometric Verification: Re-Ranking Point Cloud Retrieval for Metric Localization', *2023 IEEE Robotics and Automation Letters* ***(RA-L)*** *+ Selected for* ***ICRA 2024 Oral presentation***. (publication, project page)
- J. Knights*, **K. Vidanapathirana***, M. Ramezani, P. Moghadam, S. Sridharan, C. Fookes. 'WildPlaces: A Large-Scale Dataset for Lidar Place Recognition in Unstructured Natural Environments', *2023 IEEE International Conference on Robotics and Automation* ***(ICRA)***. *Equal contribution and joint first-author. (publication, project page)
- **K. Vidanapathirana**, M. Ramezani, P. Moghadam, S. Sridharan, C. Fookes. 'LoGG3D-Net: Locally Guided Global Descriptor Learning for 3D Place Recognition', *2022 IEEE International Conference on Robotics and Automation* ***(ICRA) (Oral presentation - virtual)***. (publication, project page)
- **K. Vidanapathirana**, P. Moghadam, B. Harwood, M. Zhao, S. Sridharan, C. Fookes. 'Locus: LiDAR-based Place Recognition using Spatiotemporal Higher-Order Pooling', *2021 IEEE International Conference on Robotics and Automation* ***(ICRA) (Oral presentation - virtual)***. (publication, project page)
- D. Ranasinghe, **K. Vidanapathirana**, T. Wickramarachchi, K. Katuwandeniya, P. Jayasekara, S. Ajisaka. 'Development of a Lightweight, Low-cost, Self-balancing Personal Mobility Vehicle for Autonomous Indoor Navigation', *In 2019 IEEE/ASME International Conference on Advanced Intelligent Mechatronics* ***(AIM) (Oral presentation)***. (publication, project page)

REVIEWER ACTIVITY

Journals T-RO, RA-L, Pattern Recognition, P&RS.

Conferences [Robotics]: CoRL, ICRA, IROS.
[Computer Vision]: CVPR, ICCV, ECCV, ACCV.

REFEREES

Simon Lucey
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Professor, University of Adelaide. Director, AIML.
My internship advisor and current supervisor.

Sridha Sridharan
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Professor, QUT.
My (principal) PhD supervisor.

Peyman Moghadam
Peyman.Moghadam@data61.csiro.au
Principal Research Scientist, CSIRO. Adj. Prof. QUT.
My (external) PhD supervisor.