PHONE THIHA KYAW

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EDUCATION

University of Toronto, Toronto, Ontario *January 2025 - Present*
Master of Applied Science (MASc) in Aerospace Science and Engineering
Supervisor: Prof. Jonathan Kelly

University of Portsmouth, Portsmouth, United Kingdom *May 2022 - May 2023*
Bachelor of Engineering (BEng) with Honours in Electronic Engineering *First Class Honours*
Thesis Title: *A Novel Any-angle Path Planning Algorithm*
on Non-uniform Grid Maps
Supervisor: Prof. Thet Naing Oo

Yangon Technological University, Yangon, Myanmar *December 2015 - December 2021*
Mechatronics Engineering
Supervisor: Prof. Theint Theint Thu

TEACHING AND VOLUNTEERING

Computer Vision and Machine Learning Lab *January 2021 - December 2021*
Teaching Assistant Supervisor: Prof. Theint Theint Thu
Department of Mechatronic Engineering
Yangon Technological University, Myanmar

- Instructor of McE-51069 (AI & Computer Vision) online course
- Designed and delivered a comprehensive course curriculum focused on reinforcement learning

Cluster of Science and Technology *July 2017 - June 2018*
President
Yangon Technological University, Myanmar

- Served as President of the student club 'Cluster of Science and Technology (CST)'
- Led the team for one year, overseeing activities aimed at keeping students updated on the latest developments in science and technology
- Contributed to the promotion of science and technology awareness within the university community, enhancing engagement and knowledge sharing

Lae Lar Technology Co., Ltd *March 2018 - March 2020*
Instructor

- Designed and developed online courses on Robot Operating System (ROS) and Python programming language, empowering Myanmar students to stay updated with the latest trends in robotics

HONORS, AWARDS AND SCHOLARSHIPS

Graduate Funding Package *2025 - 2027*
University of Toronto Institute for Aerospace Studies

- $56,000 per academic year, $112,000 total

Best Presenter Award *2022*
LionsBot International Pte Ltd, Singapore

Senior Championship Award *2018*
Myanmar STEM Competition

Certificate of Honor Award *2017*
Ministry of Education, Myanmar

- Recognition for achieving world rank 6th in the First Global Robotics Competition, 2017

Certificate of Excellence Award *2017*
International FIRST Committee Association

- Recognition for outstanding representation of Team Myanmar and excellence in the Inaugural 2017 FIRST Global Challenge in Washington, DC

PROFESSIONAL ACTIVITIES

Served/ing as a reviewer for

- Journals

  - IEEE Robotics and Automation Letters (RA-L)

  - IEEE Transactions on Automation Science and Engineering (T-ASE)

- Conferences

  - IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)

Mar. 2024	"Robotics TechTalk", Invited talk, American Center Yangon, Myanmar.
Dec. 2019	"Mobile Robot Kinematics", Invited workshop, Laboratory of Robotics and AI (LORA), Yangon Technological University, Myanmar.
Jul. 2019	"Engineering and Robotics", Invited talk, Gakken Classroom Education Seminar, Myanmar.
Feb. 2019	"Python Programming for beginners", Invited workshop, MakerFest Myanmar.
Jul. 2018	"Introduction to Python Programming", Invited workshop, Barcamp TU Hinthada, Myanmar.

RESEARCH AND WORK EXPERIENCE

Dyson, Singapore *August 2024 - January 2025*
Senior Software Engineer, Robotics

- Designed and maintained the high-level software stack and scalable distributed system architectures
- Drove a culture of software quality and promoted a collaborative engineering culture across the team

LionsBot International Pte Ltd, Singapore *February 2022 - July 2024*
Software Engineer, Autonomy

- Led the development and strategic planning of key modules and infrastructure for the perception stack
- Provided leadership in reviewing, guiding, and training the team to improve overall code quality and performance
- Led the initiative to set up internal automated testing and tooling infrastructure to optimize development processes
- Contributed to the development of multiple patent-pending technologies

ROAR Lab *October 2019 - December 2020*
Research Intern Supervisor: Prof. Mohan Rajesh Elara

- Published research articles on robotics, path planning, and computer vision

- Developed autonomy systems for various indoor and outdoor reconfigurable robots, including stair- climbing and wall-climbing robots

NANODEGREES

Udacity C++ Nanodegree Program *Graduated February 2021*
Curriculum: OOP, Memory Management, Concurrency

Udacity Sensor Fusion Nanodegree Program *Graduated March 2020*
Curriculum: Lidar, Radar, Camera, Kalman Filters

SKILLS

Spoken Languages: English (Fluent), Burmese (Native)
Programming Languages: C++, Python, Matlab, Javascript
Tools and Technologies: ROS/ROS2, DDS, Qt, CMake, LATEX, Bash/Shell, Linux, Git, Jira, Confluence

PUBLICATIONS

Phone Thiha Kyaw, Anh Vu Le, Lim Yi, Prabakaran Veerajagadheswar, Minh Bui Vu and Mohan Rajesh Elara, *Greedy heuristics for sampling-based motion planning in high-dimensional state spaces*, arXiv preprint arXiv:2405.03411, 2024 [Link].

Phone Thiha Kyaw, Anh Vu Le, Prabakaran Veerajagadheswar, Mohan Rajesh Elara, Theint Theint Thu, Nguyen Huu Khanh Nhan, Phan Van Duc and Minh Bui Vu, *Energy-efficient path planning of reconfigurable robots in complex environments*, IEEE Transactions on Robotics, 2022 [Link].

Phone Thiha Kyaw, Aung Paing, Theint Theint Thu, Rajesh Elara Mohan, Anh Vu Le and Prabakaran Veerajagadheswar, *Coverage path planning for decomposition reconfigurable grid-maps using deep reinforcement learning based travelling salesman problem*, IEEE Access, 2020 [Link].

Anh Vu Le, **Phone Thiha Kyaw**, Rajesh Elara Mohan, Sai Htet Moe Swe, Ashiwin Rajendran, Kamalesh Boopathi and Nguyen Huu Khanh Nhan, *Autonomous floor and staircase cleaning framework by reconfigurable sTetro robot with perception sensors*, Journal of Intelligent & Robotic Systems, 2021.

Anh Vu Le, **Phone Thiha Kyaw**, Prabakaran Veerajagadheswar, MA Viraj J Muthugala, Mohan Rajesh Elara, Madhu Kumar and Nguyen Huu Khanh Nhan, *Reinforcement learning-based optimal complete water-blasting for autonomous ship hull corrosion cleaning system*, Ocean Engineering, 2021.

Prabakaran Veerajagadheswar, Anh Vu Le, **Phone Thiha Kyaw**, Mohan Rajesh Elara and Aung Paing, *An Autonomous Descending-Stair Cleaning Robot with RGB-D based Detection, Approaching, and Area coverage Process*, 2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2022.

Veerajagadheswar Prabakaran, Anh Vu Le, **Phone Thiha Kyaw**, Prathap Kandasamy, Aung Paing and Rajesh Elara Mohan, *sTetro-D: A deep learning based autonomous descending-stair cleaning robot*, Engineering Applications of Artificial Intelligence, 2023.

Anh Vu Le, Prabakaran Veerajagadheswar, **Phone Thiha Kyaw**, Mohan Rajesh Elara and Nguyen Huu Khanh Nhan, *Coverage path planning using reinforcement learning-based TSP for hTetran—A polyabolo-inspired self-reconfigurable tiling robot*, Sensors, 2021.

Anh Vu Le, Prabakaran Veerajagadheswar, **Phone Thiha Kyaw**, MA Viraj J Muthugala, Mohan Rajesh Elara, Madhu Kuma and Nguyen Huu Khanh Nhan, *Towards optimal hydro-blasting in reconfigurable climbing system for corroded ship hull cleaning and maintenance*, Expert Systems with Applications, 2021.

Anh Vu Le, Rizuwana Parween, **Phone Thiha Kyaw**, Rajesh Elara Mohan, Tran Hoang Quang Minh and Charan Satya Chandra Sairam Borusu, *Reinforcement learning-based energy-aware area coverage for reconfigurable hRombo tiling robot*, IEEE Access, 2020.

Veerajagadheswar Prabakaran, Anh Vu Le, **Phone Thiha Kyaw**, Rajesh Elara Mohan, Prathap Kandasamy, Tan Nhat Nguyen and Madhukumar Kannan, *Hornbill: A self-evaluating hydro-blasting reconfigurable robot for ship hull maintenance*, IEEE Access, 2020.