PHONE THIHA KYAW

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mlsdphonethk@gmail.com | Curriculum Vitae, 30th August 2023

EDUCATION

University of Portsmouth, Portsmouth, United Kingdom — *May 2022 - May 2023*
Bachelor of Engineering 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

RESEARCH AND WORK EXPERIENCE

LionsBot International Pte Ltd — *February 2022 - Present*
Senior Software Engineer (Autonomy) — *February 2023 - Present*
Software Engineer (Autonomy) — *February 2022 - February 2023*

ROAR Lab — *October 2019 - December 2020*
Research Intern — Supervisor: Prof. Mohan Rajesh Elara
Singapore University of Technology and Design

- Published research articles on topics related to robotics, path planning, and computer vision
- Worked on the indoor and outdoor service mobile robots, developing their autonomy systems

RESEARCH INTERESTS

I am particularly interested in, but not limited to:

- high-dimensional motion planning in continuous domain
- constrained motion planning problems
- completeness and optimality guarantees in high-dimensional planning
- integrating symbolic (tasks) and geometric constraints (motion planning)
- generalization techniques in motion planning

PUBLICATIONS

Phone Thiha Kyaw, Anh Vu Le, Prabakaran Veerajagadheswar, Mohan Rajesh Elara, Theint Theint Thu, Nguyen Huu Khanh Nhan, Phan Van Duc, Minh Bui Vu, *Energy Efficient Path Planning of Reconfigurable Robots in Complex Environments*, IEEE Transactions on Robotics, 2021.

Phone Thiha Kyaw, Aung Paing, Theint Theint Thu, Mohan Rajesh Elara, Anh Vu Le, Prabakaran Veerajagadheswar, *Coverage Path Planning for Decomposition Reconfigurable Grid-Maps Using Deep Reinforcement Learning Based Travelling Salesman Problem*, IEEE Access, 2020.

Anh Vu Le, **Phone Thiha Kyaw**, Mohan Rajesh Elara, Sai Htet Moe Swe, Ashiwin Rajendran, Kamalesh Boopathi, Nguyen Huu Khanh Nhan, *Autonomous Floor and Staircase Cleaning Framework by Reconfigurable sTetro Robot with Perception Sensors*, Journal of Intelligent & Robotic Systems, 2020.

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

Veerajagadheswar Prabakaran, Anh Vu Le, **Phone Thiha Kyaw**, Prathap Kandasamy, Aung Paing, 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, 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, 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, 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, Madhukumar Kannan, *Hornbill: A Self-Evaluating Hydro-Blasting Reconfigurable Robot for Ship Hull Maintenance*, IEEE Access, 2020.

HONORS AND AWARDS

- Honorable Mention by Daw Aung San Suu Kyi, State Counsellor of the Republic of the Union of Myanmar, during the 43rd Singapore Lecture, 2018, recognized for achieving 6th place, the top among ASEAN countries in the World Robotics Competition
- Certificate of Honor Award, Ministry of Education Myanmar, recognition for achieving world rank 6th in the First Global Robotics Competition, 2017
- Certificate of Excellence Award, International FIRST Committee Association, recognized for outstanding representation of Team Myanmar and excellence in the Inaugural 2017 FIRST Global Challenge in Washington, DC
- Best Presenter Award, Autonomy Week 2022, LionsBot International Pte Ltd, Singapore
- Senior Championship Award, Myanmar STEM Competition, 2018-2019

PROFESSIONAL ACTIVITIES

- Served/ing as a reviewer for
  - IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
  - IEEE Robotics and Automation Letters (RA-L)

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) 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

INVITED TALKS/WORKSHOPS

- Invited talk at Gakken Classroom Education Seminar, 2019
- Mobile Robot Kinematics, Invited workshop at Laboratory of Robotics and AI (LORA), Yangon Technological University, Myanmar, 2019
- Python Programming for beginners, Invited workshop at MakerFest Myanmar, 2019
- Introduction to Python Programming, Invited workshop at Barcamp TU Hinthada, 2018

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, Qt, CMake, LATEX, Bash/Shell, Linux, Git