

# Malika Meghjani, PhD

Assistant Professor of Robotics and Intelligent Systems,  
Information Systems Technology and Design (ISTD),  
Singapore University of Technology and Design (SUTD)

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## CONTACT INFORMATION

8 Somapah Road,  
#05-101, Building 1,  
Singapore 487372

**Phone number:** +65 6499 716  
**Email:** [malika\\_meghjani@sutd.edu.sg](mailto:malika_meghjani@sutd.edu.sg)  
**Web address:** [www.malikameghjani.com](http://www.malikameghjani.com)

## RESEARCH INTEREST

Mobile Robotics, Multi-Robot Coordination, Planning under Uncertainty, Fleet Management, Computer Vision, Machine Learning, Algorithm Design, Image and Signal Processing, Autonomous Underwater Vehicles (AUV) and Autonomous Surface Vehicles (ASV), Self-Driving Cars.

## PROFESSIONAL PREPARATION

2010-2016 **Ph.D., Computer Science**, McGill University  
**Area of Study:** Multi-robot exploration, mapping, planning and coordination  
2007-2009 **M.Eng., Electrical and Computer Engineering**, McGill University  
**Area of Study:** Computer Vision, Machine Learning, Pattern Recognition  
2003-2007 **B.Eng., Electronics and Communication Engineering**, Osmania University  
**Area of Study:** Image and Signal Processing, Communication Theory

## PROFESSIONAL APPOINTMENTS

**Assistant Professor**, Singapore University of Technology and Design, 2019-present.  
**Principal Investigator**, Temasek Laboratories, SUTD, 2019-present.  
**Collaborating Faculty**, Singapore-MIT Alliance for Research and Technology, 2019-present.  
**Academic Board Advisor**, AI Business School, 2020-present.  
**Faculty Advisor**, AI Singapore, SUTD Chapter, 2020-present.  
**Academic Board Advisor**, Singapore Women in Engineering (SWE), SUTD, 2020-present.

## SELECTED AWARDS AND HONORS

- **World's 50 Most Renowned Women in Robotics**, Analytics Insight, 2020.
- **Top 30 Women in Robotics** for 2019.
- **SMART Scholarship** for postdoctoral research, Singapore, Feb. 2017 - Feb. 2019.
- **NSERC Canadian Field Robotics Network, Strategic Network Enhancement Initiative Award** for the best robotics start-up proposal, Canada, Jun. 2015 - Jun. 2016.
- **IEEE Larry K. Wilson Regional Student Activities Award** for excellent student leadership in Canada, IEEE Montreal Section Annual Banquet, Oct. 2015.
- **McGill Scarlet Key Award** for excellence in community leadership, Mar. 2015.
- **AAAI Robotics Fellowship** at the AAAI conference, USA, Jan. 2015.
- **IEEE Canada Women in Engineering Prize** for academic excellence and contributions to IEEE women in engineering programme, Nov. 2013.
- **Google Anita Borg Finalist and Scholar** for leadership and academic excellence at the Google Scholars' Retreat, Canada, Jul. 2012 and Jul. 2013.
- **McGill Graduate Studies Fellowship Award** for academic excellence from Graduate and Postdoctoral Studies Office, Canada, Sep. 2007.

## SELECTED PUBLICATIONS<sup>1</sup>

- [1] **M. Meghjani**, et al., "Interactive Planning for Autonomous Urban Driving in Adversarial Scenarios", IEEE International Conference on Robotics and Automation (ICRA), 2021.
- [2] **M. Meghjani**, et al., "Context and Intention Aware Planning for Urban Driving", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2019.
- [3] H. Guo, Z. Meng, Z. Huang, W. Leong, Z. Chen, **M. Meghjani**, M. H Ang Jr, D. Rus, "Safe Path Planning with Gaussian Process Regulated Risk Map", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2019.
- [4] **M. Meghjani**, et al., "Mobility-on-Demand using Autonomous Vehicles: Systems, Solutions and Challenges", Cooperative Intelligent Transport Systems: Towards High-Level Automated Driving, The Institution of Engineering and Technology (IET), 2019.

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<sup>1</sup>List of publication available at <https://istd.sutd.edu.sg/people/faculty/malika-meghjani>

- [5] **M. Meghjani**, et al., “Multiclass Fleet Sizing and Mobility-on-Demand Service”, Complex Systems Design & Management (CSD&M), 2018.
- [6] **M. Meghjani**, et al., “Context-Aware Intention and Trajectory Prediction for Urban Driving Environment”, International Symposium on Experimental Robotics (ISER), 2018.
- [7] S. Verma, Y. H. Eng, H. X. Kong, H. Andersen, **M. Meghjani**, W. K. Leong, et al., “Vehicle Detection, Tracking and Behavior Analysis in Urban Driving Environments using Road Context”, IEEE International Conference on Robotics and Automation (ICRA), 2018.
- [8] S. D. Pendleton, H. Andersen, X. Du, X. Shen, **M. Meghjani**, Y. H. Eng, et al., “Perception, Planning, Control, and Coordination for Autonomous Vehicles”, in Machines, 2017.
- [9] **M. Meghjani**, S. Manjanna and G. Dudek, “Multi-Target Rendezvous Search”, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Oct. 2016. [**Finalist for Best Paper Award on Safety Security and Rescue Robotics**].
- [10] **M. Meghjani** and G. Dudek, “Multi-Robot Exploration and Rendezvous on Graphs”, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2012.

## REPORT OF INVENTIONS

**Rendezvous on Street Networks**, M. Meghjani, G. Dudek, 13th Nov. 2014.  
**Smart Mobility**, M. Meghjani, J. Li, N. Paternichelakis, G. Dudek, 28th Sep. 2015.  
**Human Interactions with Field Robots Using Overlays on Cached Maps in internet-denied Environments**, J. Li, M. Meghjani, G. Dudek, 1st Oct. 2015.

## SELECTED RESEARCH GRANTS

**AI Singapore – Co-Investigator (Co-PI), (2021–2025)**

- “The Other Me”: Human-Centered AI Assistance in Situ - \$0.4M

**ASTAR – Co-Investigator (Co-PI), (2021–2024)**

- Collaborative Human Robot Inspection & Intervention System for Challenging Underwater Environments - \$0.5M

**Maritime and Port Authority of Singapore – Co-Investigator (PI), (2020–2023)**

- Mobile collaborative robot platforms for coning/de-coning wharf operations. - \$4.5M

**SUTD, Human-AI Interaction Thrust, Principal Investigator (PI), (2020–2023)**

- Robot-aided adaptive architecture for disruption management - \$1.4M

**DSO, National Laboratories – Task-PI, (2019–2022)**

- Human-Multi-Robot Teaming with Augmented Intelligence - \$2.9M

**Singapore-MIT Alliance for Research and Technology (SMART), PI, (2020–2021)**

- Autonomous Urban Driving using Road Context, User Intents and Behaviours - \$50K

## TEACHING EXPERIENCE

**Singapore University of Technology and Design, Singapore - Instructor**

- **Robotics for Professionals**, Fall 2021.
- **Machine Learning**, Fall 2019-present.
- **Capstone**, Winter & Summer 2020.
- **Artificial Intelligence**, Summer 2020.

**McGill University, Canada - Teaching Assistant**

- **COMP 322**: Introduction to C++, Winter 2015 and Winter 2009.
- **COMP 417**: Introduction to Robotics and Intelligent Systems, Fall 2013.
- **COMP 250**: Introduction to Computer Science, Fall 2010 and Fall 2011.

## SELECTED PROFESSIONAL SERVICES

**Associate Editor** for IROS 2019 and IROS 2020.  
**Robotics Track Programme Committee member** for AAMAS 2019.  
**Chair** for IEEE ICRA Social Media, 2017 and 2019.  
**Chair** for IEEE ICRA Workshop on Robotics and Vehicular Technologies for Self-driving cars.  
**Chapter Chair** at IEEE Montreal Robotics and Automation Chapter, 2012-2015.  
**Students’ Activities Representative** at IEEE Montreal Section, 2011-2013.  
**Lead and Volunteer** at McGill Robotics Summer Camp for High School Students, 2011-2014.

## SELECTED MEDIA MENTIONS

- **30 Women in Robotics you need to know about**, Robohub, Oct 8, 2019.
- **Ep: 12: Taking Over Control**, Money Mind, Channel News Asia, Jun 24, 2019.
- **A quick demo on how Autonomous Scooters work**, IMDA Singapore, May 3 2017.
- **Robot invasion: Engineers testing out their gadgets**, iNFO news.ca, Jun 20, 2015.
- **McGill University’s robotics program gets \$5M grant**, CBC News, Feb 8, 2013.