Itamar Mishani

imishani@andrew.cmu.edu | +1-412-9099-937 | Pittsburgh (PA), USA
Itamar Mishani | imishani | https://cs.cmu.edu/~imishani

Education

Aug 2022 – Present
Carnegie Mellon University, Robotics Institute, USA
PhD in Robotics, School of Computer Science
Coursework GPA: 4/4

Sep 2020 – Jul 2022
Tel-Aviv University, Israel
MSc in Mechanical Engineering, Robotics specialization, outstanding achievements direct program
- Thesis Title: "*Dual-Arm Robotic Manipulation of Wires Using Solely Force/Torque Feedback*"
- *Summa cum laude*

GPA: 96/100

Sep 2017 – Jul 2021
Tel-Aviv University, Israel
BSc in Mechanical Engineering, outstanding students program
- *Summa cum laude*
  - 2020/2021 ***Rector's*** *Honor List*
  - 2020/2021 ***Dean's*** *List*
  - 2019/2020 ***Dean's*** *List*
  - 2018/2019 ***Dean's*** *List*
  - 2017/2018 ***Dean's*** *List*

GPA: 96/100 (Ranked 1st in class)

Jul 2011
Harel High School, *Israel*
Majored in Physics, Chemistry, Math and Music

Experience

Aug 2022 - Present
Researcher, *Robotics Institute, Carnegie Mellon University, USA*
- Planning and learning for robotic manipulation. Developing algorithms for robotic manipulation in contact-rich cluttered environments and for high-dimensional motion planning problems.
  Advisor: Prof. Maxim Likhachev.

Teaching Assistant, *Robotics Institute, Carnegie Mellon University, USA*
- *16-782:* "*Planning and Decision Making in Robotics*", School of Computer Science (Fall 2024)
- *16-350:* "*Planning Techniques for Robotics*", School of Computer Science (Spring 2024)

Jul 2020 - Jul 2022
Researcher, *Tel-Aviv University, Israel*
- Robotics, AI and Algorithms researcher and developer. Developed real-time non-visual shape estimation and robotic dual-arm manipulation control of elastics wires.
  Advisor: Prof. Avishai Sintov.

Teaching Assistant, *Tel-Aviv University, Israel*
- "*Introduction to Robotics*", School of Mechanical Engineering
- "*Control Lab*", School of Mechanical Engineering
- "*Mechanics of Solids (1)*", School of Mechanical Engineering
- "*Robotics and control lab*", Designed and created course material, School of Mechanical Engineering

Oct 2021 - May 2022
Autonomous Race Car Co-Leader, *Formula Race Team, Tel-Aviv University, Israel*
- Leader of automation team

Mar 2021 - Oct 2021 | **Control Team**, *Formula Race Team, Tel-Aviv University, Israel*
- Developing "Formula Student" control system

Nov 2018 - Jul 2020 | **Undergraduate Researcher**, *Tel-Aviv University, Israel*
- System Engineering and Networks - "*Breaking monolith systems into modules: Computational Complexity*".
  Advisor: Prof. Yoram Reich.

Jan 2017 - Sep 2017 | **PET (Israel SAT) Teacher**, *Psychometry Academy, Israel*

Skills

Technical Skills
- Programming - ROS (Robot operating system), C++, Python, Arduino, Pytorch, Solidworks.

Other Skills
- Guitarist
- Kitesurfer

Publications

2025
1. Mishani, I., Shaoul, Y. & Likhachev, M. MOSAIC: A Skill-Centric Algorithmic Framework for Long-Horizon Manipulation Planning. *Submitted for publication at the 21st edition of the Robotics: Science and Systems (RSS)* (2025).
2. Shaoul*, Y., Mishani*, I., Vats*, S., Li, J. & Likhachev, M. Multi-Robot Motion Planning with Diffusion Models [**Spotlight**]. *The Thirteenth International Conference on Learning Representations (ICLR)* (2025).

2024
3. Mishani, I., Feddock, H. & Likhachev, M. Constant-time Motion Planning with Anytime Refinement for Manipulation. *2024 IEEE International Conference on Robotics and Automation (ICRA)* (2024).
4. Shaoul*, Y., Mishani*, I., Li, J. & Likhachev, M. Accelerating Search-Based Planning for Multi-Robot Manipulation by Leveraging Online-Generated Experiences [**Best Student Paper Award**]. *34th International Conference on Automated Planning and Scheduling* (2024).

2022
5. Mishani, I. & Sintov, A. Learning configurations of wires for real-time shape estimation and manipulation planning. *Engineering Applications of Artificial Intelligence, vol. 121, pp. 105967, Jan. 2023, doi: https://doi.org/10.1016/j.engappai.2023.105967* (2022).
6. Mishani, I. & Sintov, A. Real-time Non-visual Shape Estimation and Robotic Dual-Arm Manipulation Control of an Elastic Wire. *IEEE Robotics and Automation Letters, vol. 7, no. 1, pp. 422-429, Jan. 2022, doi: 10.1109/LRA.2021.3128707., with presentation in the 2022 IEEE International Conference on Robotics and Automation (ICRA), Philadelphia (PA), USA* (2022).