

# Itamar Mishani

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in Itamar Mishani

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## Education

Aug 2022 – Present	<b>Carnegie Mellon University, Robotics Institute, USA</b> <i>PhD in Robotics, School of Computer Science.</i>
Sep 2020 – Jul 2022	<b>Tel-Aviv University, Israel</b> <i>MSc in Mechanical Engineering, Robotics specialization, outstanding achievements direct program.</i> <ul style="list-style-type: none"><li>• <i>Summa cum laude.</i></li></ul> <b>GPA:</b> 96/100
Sep 2017 – Jul 2021	<b>Tel-Aviv University, Israel</b> <i>BSc in Mechanical Engineering, outstanding students program.</i> <ul style="list-style-type: none"><li>• <i>Summa cum laude.</i><ul style="list-style-type: none"><li>– 2020/2021 <b>Rector's Honor List.</b></li><li>– 2020/2021 <b>Dean's List.</b></li><li>– 2019/2020 <b>Dean's List.</b></li><li>– 2018/2019 <b>Dean's List.</b></li><li>– 2017/2018 <b>Dean's List.</b></li></ul></li></ul> <b>GPA:</b> 96/100 (Ranked 1st in class.)
Jul 2011	<b>Harel High School, Israel</b> <i>Majored in Physics, Chemistry, Math and Music.</i>

## Experience

Aug 2022 - Present	<b>Researcher, Robotics Institute, Carnegie Mellon University, USA</b> <ul style="list-style-type: none"><li>• Developing algorithms that integrate search-based planning with deep learning techniques, tailored for robotic manipulation tasks, especially in cluttered environments requiring robust handling of heavy contact.</li></ul> Advisor: Prof. Maxim Likhachev. <b>Teaching Assistant, Robotics Institute, Carnegie Mellon University, USA</b> <ul style="list-style-type: none"><li>• 16-350 "Planning Techniques for Robotics", Robotics Institute, School of Computer Science.</li></ul>
Jul 2020 - Jul 2022	<b>Researcher, Tel-Aviv University, Israel</b> <ul style="list-style-type: none"><li>• Robotics, AI and Algorithms researcher and developer. Developed real-time non-visual shape estimation and robotic dual-arm manipulation control of elastics wires.</li></ul> Advisor: Prof. Avishai Sintov. <b>Teaching Assistant, Tel-Aviv University, Israel</b> <ul style="list-style-type: none"><li>• "Introduction to Robotics", School of Mechanical Engineering.</li><li>• "Control Lab", School of Mechanical Engineering</li><li>• "Mechanics of Solids (1)", School of Mechanical Engineering.</li><li>• "Robotics and control lab", Designed and created course material, School of Mechanical Engineering.</li></ul>
Oct 2021 - May 2022	<b>Autonomous Race Car Co-Leader, Formula Race Team, Tel-Aviv University, Israel</b> <ul style="list-style-type: none"><li>• Leader of automation team.</li></ul>

Mar 2021 - Oct 2021	<b>Control Team</b> , <i>Formula Race Team, Tel-Aviv University, Israel</i> <ul style="list-style-type: none"> <li>Developing "Formula Student" control system.</li> </ul>
Nov 2018 - Jul 2020	<b>Undergraduate Researcher</b> , <i>Tel-Aviv University, Israel</i> <ul style="list-style-type: none"> <li>System Engineering and Networks - "<i>Breaking monolith systems into modules: Computational Complexity</i>".</li> </ul> Advisor: Prof. Yoram Reich.
Jan 2017 - Sep 2017	<b>PET (Israel SAT) Teacher</b> , <i>Psychometry Academy, Israel</i> .
Mar 2012 - Jul 2016	<b>Military Service</b> , <i>IDF</i> <i>Company deputy chief (Lieutenant)</i> <ul style="list-style-type: none"> <li>Acting both as company commander and second in command at Search and Rescue fighters unit.</li> </ul>

## Skills

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Technical Skills	<ul style="list-style-type: none"> <li>Programming - ROS (Robot operating system), C++ , Python, Arduino, Pytorch, Solidworks.</li> </ul>
Other Skills	<ul style="list-style-type: none"> <li>Guitarist.</li> <li>Kitesurfer.</li> </ul>

## Publications

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2024	1. Shaoul*, Y., Mishani*, I., Li, J. & Likhachev, M. Accelerating Search-Based Planning for Multi-Robot Manipulation by Leveraging Online-Generated Experiences. <i>34th International Conference on Automated Planning and Scheduling</i> (2024).
2023	2. Mishani, I., Feddock, H. & Likhachev, M. Constant-time Motion Planning with Anytime Refinement for Manipulation. <i>Accepted for publication at the 2024 IEEE International Conference on Robotics and Automation (ICRA 2024)</i> . arXiv: 2311.00837 [cs.R0] (2023).
2022	3. Mishani, I. & Sintov, A. Learning configurations of wires for real-time shape estimation and manipulation planning. <i>Engineering Applications of Artificial Intelligence</i> , vol. 121, pp. 105967, Jan. 2023, doi: <a href="https://doi.org/10.1016/j.engappai.2023.105967">https://doi.org/10.1016/j.engappai.2023.105967</a> (2022).
	4. Mishani, I. & Sintov, A. Real-time Non-visual Shape Estimation and Robotic Dual-Arm Manipulation Control of an Elastic Wire. <i>IEEE Robotics and Automation Letters</i> , vol. 7, no. 1, pp. 422-429, Jan. 2022, doi: <a href="https://doi.org/10.1109/LRA.2021.3128707">10.1109/LRA.2021.3128707</a> ., with presentation in the 2022 IEEE International Conference on Robotics and Automation (ICRA), Philadelphia (PA), USA (2022).