MIHNEA TOADER

Contacts

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Language Skills

- Romanian - Mother tongue
- English - C2 level, CAE and IELTS
- German - B2 level

Education and Training

18/09/2023 - 28/02/2026 Zurich, Switzerland
Robotics, Systems and Control MSc
ETH Zürich

Master thesis on active perception in IsaacLab: getting robots to purposefully look around.

01/09/2020 - 30/06/2023 Delft, Netherlands
Computer Science and Engineering BsC
Technical University Delft

Graduated with cum laude distinction. Final thesis on the topic of Knowledge Distillation from Neural Radiance Field Networks. Full project on GitHub.

01/08/2022 - 01/12/2022 Delft, Netherlands
National University of Singapore Minor

Attended a self-composed semester minor on the topic of Electrical, Mechanical and Software Engineering.

01/10/2016 - 30/06/2020 Brasov, Romania
Romanian Baccalaureate
Andrei Saguna National College

Final average 9.61/10

About Me

I'm a Robotic Perception engineer, with a passion for holistically integrated systems that have a positive societal impact. Experience with 3D reconstruction, SLAM and image matching pipelines.

Work Experience

01/06/2024 - 31/06/2025 Zürich, Switzerland
Perception Intern & Working Student - ANYbotics

- Ran a full sensor elicitation campaign (in-loop + out-of-loop) to evaluate new sensor configs on ANYmal
- Integrated new depth and LiDAR sensors on prototype robot.
- Improved ICP throughput by point matching on tailored data structure.
- Improved perception system reliability by expanding automated testing capabilities in representative simulated environments.

01/09/2021 - 31/07/2022 Delft, Netherlands
Software Engineer - Formula Student Delft

- Implemented Vehicle State Estimation in the autonomous pipeline.
- Participated in wiring production.
- Learned resource management and project planning.

Projects

02/2025 - 06/2025 Zurich, Switzerland
On a DIME - Semester project

- Built a context-aware image matching pipeline for robotic use.
- Used a pretrained image encoder and designed an image matching transformer decoder that matches pixels directly from ViT patches.
- Improved viewpoint invariance, enabling more robust loop closure and place recognition.

09/2023 - 02/2024 Zurich, Switzerland
Dexterous robotic hand - RWR class

- Designed, manufactured, built and programmed a dexterous robotic hand from scratch in a team of 4.
- Led finger design and motion retargeted control.
- Implemented teleoperation from hand pose estimation.
- Completed a set of manipulation tasks - grasp, pick up, spin, roll

09/2016 - 04/2020 Brasov, Romania
Robotics Competition FIRST Tech Challenge

- Participated as a programmer for four consecutive years, for two of which I also acted as team leader.
- Developed leadership skills.

Technical skills

Programming: Python, C++,
Frameworks: PyTorch, OpenCV, NumPy, ROS, IsaacSim/Lab
CAD software: Solidworks, Fusion360
Other technologies: Git, Ubuntu, Docker