



Leonardo Maglanoc
Robotics & AI Re-
searcher

- Munich, Germany
- leonardo-maglanoc.com
- leo.maglanoc@tum.de
- LeoMaglanoc
- leonardo-maglanoc

- Research Interests
- Humanoids, manipulators, drones
 - 3D computer vision and SLAM
 - Safety in robotics with formal verification
 - Computational neuroscience
 - Robotics foundation models

- Programming
- Python (PyTorch, ROS2)
 - Linux (Git, Docker)
 - C++
 - Java

- Languages
- German (mother tongue)
 - Norwegian (mother tongue)
 - English (C2)
 - French (B1)

Short Profile

TUM Robotics & AI Master’s student advancing multifingered manipulation at a humanoid startup. My research goal is to enable safe and reliable humanoid autonomy in human environments. I have an international background: of Asian heritage, born in Norway, and raised in Germany. Outside of work, I enjoy practicing calisthenics and jogging, reading philosophy, and writing poetry.

Work Experiences

- Sep 2025 - Present Master Thesis Student Foundation Robotics, Munich, Germany, full-time Master’s thesis in collaboration with humanoid robotics startup on language-guided multifingered manipulation with foundation models.
- Feb 2025 - Aug 2025 AI/ML Research Intern BMW Group Research, Munich, Germany, full-time Development of neuro-inspired computing architecture called Oscillatory Neural Networks (ONNs) in collaboration with IBM. Executed a user study with a tactile hardware prototype and collected dataset from 10 participants. Designed Python/PyTorch-based ONN-simulators and applied them to collected dataset as an ONN-based Human-Vehicle Interaction AI demonstrator.
- Apr 2023 - May 2024 Robotics Research Assistant Technical University Munich, Germany, part-time Making physical human-robot interaction (pHRI) provably safe with formal verification for the TUM CPS group. Implementation of kinematics and trajectory planning algorithms. Contributions to research paper conditionally accepted for publication in IEEE Transactions on Robotics (IEEE T-RO).
- Nov 2020 - Apr 2021 CS Teaching Assistant Technical University Munich, Germany, part-time Teaching responsibilities for introduction to informatics. Basics of object-oriented programming with Java and general problem-solving in computer science. Correcting weekly coding homework and exams.

Publications

- J. Thumm, J. Balletshofer, L. Maglanoc, L. Muschal, and M. Althoff, "A general safety framework for autonomous manipulation in human environments," IEEE Transactions on Robotics, 2025.

Education

- Apr 2023 - Present M.Sc. Robotics, Cognition, Intelligence Technical University Munich, Germany Interdisciplinary Master of Science program of the Departments of Informatics, Electrical Engineering, and Mechanical Engineering. Specialization in robotics, computer vision, and machine learning.
- Feb 2024 - Aug 2024 Siemens Mentoring Programme Siemens, Munich, Germany Career-building by Siemens senior-executives for ambitious students. Presented the hackathon project Smart 3D Printing with Machine Learning at Siemens RIE Munich Conference and almost got 1st place.
- Sep 2019 - Mar 2023 B.Sc. Informatics Technical University Munich, Germany Bachelor of Science in computer science with a minor in mathematics. Specialization in mathematical modeling, cyber-physical systems, and artificial intelligence. Bachelor Thesis at Chair for Robotics: Provably Safe Human-Robot Interaction for Manipulation using Power and Force Limiting (Grade: 1.3).

Projects

- Dec 2025 RoboTUM Hackathon RoboTUM and Motius, Munich, Germany 48-hour RoboTUM hackathon at Motius facilities with SO-101 robot. Full robot learning pipeline with data teleoperation collection, fine-tuning on diffusion- and VLA-models, and inference for pick and place task.