



Leonardo Maglanoc

Robotics & AI Research Engineer

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- Research Interests
- Safe humanoid loco-manipulation
 - Robot learning & foundation models
 - Neuro-inspired computation for embodied AI
 - 3D computer vision and SLAM for robotics

- Programming
- Python (PyTorch, ROS2)
 - Linux (Git, Docker)
 - C++
 - Web Apps (FastAPI)

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

Short Profile

Robotics & AI research engineer focused on safe humanoid systems. My mission is to make humanoid autonomy deployable at scale in human environments through formal safety guarantees — from semantic intent to torque-level execution.

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*, accepted for publication, 2025. [Demo]

Work Experiences

- Sep 2025 - On-going Master Thesis Student Foundation Robotics, Munich, Germany, full-time
Conducting research on language-guided dexterous manipulation with foundation models in collaboration with a Silicon Valley-based humanoid robotics startup.
- Feb 2025 - Aug 2025 AI/ML Research Intern BMW Group Research, Munich, Germany, full-time
Developing neuro-inspired Oscillatory Neural Networks (ONNs) in collaboration with IBM. Designing Python/PyTorch simulators and evaluating them on data collected from a tactile hardware user study (10 participants) for a human-vehicle interaction demonstrator.
- Apr 2023 - May 2024 Robotics Research Assistant Technical University Munich, Germany, part-time
Working on formally verified safe physical human-robot interaction for the TUM CPS group. Implementing kinematics and trajectory planning algorithms and contributing to a publication accepted in IEEE Transactions on Robotics.
- Nov 2020 - Apr 2021 CS Teaching Assistant Technical University Munich, Germany, part-time
Teaching introductory computer science with a focus on object-oriented programming in Java and algorithmic problem-solving, and grading weekly assignments and exams.

Education

- Apr 2023 - On-going M.Sc. Robotics, Cognition, Intelligence Technical University Munich, Germany
Interdisciplinary degree spanning computer science, electrical engineering, and mechanical engineering with specialization in robotics, computer vision, and machine learning.
- Feb 2024 - Aug 2024 Siemens Mentoring Programme Siemens, Munich, Germany
Career development programme for high-performing students. Presented the project "Smart 3D Printing with Machine Learning" at the Siemens RIE Conference.
- Sep 2019 - Mar 2023 B.Sc. Informatics Technical University Munich, Germany
Computer science degree with focus on cyber-physical systems and artificial intelligence. Bachelor's thesis: Provably Safe Human-Robot Interaction for Manipulation using Power and Force Limiting (Grade: 1.3).

Projects

- Feb 2026 Hack-Nation Global AI Hackathon MIT & CDTM
Built "EasyBuy," an AI e-commerce assistant. Selected for the Venture Lab programme (15–20 teams chosen from 6,000+ applicants). [Demo], [Code]
- Dec 2025 RoboTUM Hackathon RoboTUM & Motius, Munich, Germany
Built a full robot learning pipeline for an SO-101 platform, including teleoperation data collection, fine-tuning of diffusion models, and real-time inference for pick-and-place tasks.
- Since Nov 2025 AI Grid National AI Research Network (Germany)
Participating in a research-oriented AI network connecting academia and industry to advance applied artificial intelligence.