

Théo Alessandro Hermann

Researcher and robotics engineer · MIT Senseable City Lab Rio

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Four years building perception and autonomy systems on edge hardware. Franco-Brazilian, trained in Switzerland. French · English · Portuguese · Spanish.

Computer vision and MLOps at **Roboat** (MIT spinoff) as its first intern, adding camera perception to a stack built on LiDAR. Research fellow at **MIT Senseable City Lab Rio** — 3D reconstruction of dense informal settlements from terrestrial LiDAR, terrain models and building footprints. Research assistant at EPFL VITA Lab; visiting researcher at IRI (CSIC-UPC), Barcelona.

EXPERIENCE

Research Fellow Jan 2025 – Present

MIT Senseable City Lab Rio · Rio de Janeiro, Brazil

There from the first week of the Rio branch. I work on morphometrics of informal urban form: describing favela fabric from terrain models and building footprints so that wind and sunlight simulation has something defensible to run on. Tech: Python, GeoPandas, point-cloud tooling.

Computer Vision and MLOps Intern (first intern) Mar 2024 – Aug 2024

Roboat (MIT Spinoff) · Amsterdam, Netherlands

Brought camera-based perception to a stack that until then ran on LiDAR: detection and multi-object tracking for autonomous canal vessels on Jetson Orin, and the MLOps around it, with DVC versioning over the on-water recordings the models were trained on. Tech: PyTorch, ROS 2, Docker, DVC.

Visiting Research Fellow Oct 2023 – Feb 2024

IRI (CSIC-UPC) · Barcelona, Spain

Built PyTorch fusion model combining neuromorphic event cameras with visual-inertial odometry for 6-DOF drone state estimation during aggressive maneuvers (>5g). Tech: PyTorch, ROS, C++.

Research Assistant Jun 2022 – Jun 2023

VITA Lab, EPFL · Lausanne, Switzerland

Built and open-sourced a full ROS autonomy stack for mobile robot navigation in crowded environments. Real-time detection, multi-object tracking, 3D pose estimation, and trajectory prediction on Segway Loomo. Tech: ROS, Python, C++, OpenCV.

EDUCATION

Master’s degree (M.Sc), Robotics — EPFL 2021–2024

Exchange (B.Sc 3rd year), Embedded Systems — KTH Royal Institute of Technology 2020–2021

Bachelor’s degree (B.Sc), Microengineering — EPFL 2018–2021

TECHNICAL SKILLS

Robotics	ROS/ROS2, SLAM, path planning, sensor fusion, Jetson/edge deployment
ML / AI	PyTorch, scikit-learn, reinforcement learning
Perception	LiDAR processing, point clouds, stereo vision, event cameras, 3D reconstruction
Dev	Python, C++, Git, Docker, CI/CD, DVC, MLOps
Tools	OpenFOAM CFD, Blender, GeoPandas

LANGUAGES

French Native · English Fluent · Portuguese Fluent · Spanish Conversational