

# # Fabio Hübel

> PhD Student in Robotics & Autonomy

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## // whoami

Robotics & control researcher at the interface of classical control and machine learning, focused on task-level autonomy, world models, and reinforcement learning for mobile robots.

## // experience

### Visiting Researcher

2025 – 2026

Stanford University · Autonomous Systems Lab

- › Agentic orchestration and full-stack embodied question answering for mobile robots on the DARPA TIAMAT project.

### BMW Fastlane Scholar

2024 – 2025

BMW AG

- › Computer-vision street-model architectures for AV; RL / VLA finetuning for pick-and-place.

### Student Software Engineer

2024

Vector Informatik GmbH

- › Custom compiler validation with fuzz-testing (.NET / C#).

### Engineering Intern, R&D

2023 – 2024

Mercedes-Benz AG

- › Slip-control algorithm for clutch-based torque distribution in an EV drivetrain.

### Student Research Assistant

2022 – 2023

Institute of Nonlinear Mechanics · Univ. Stuttgart

- › Research & data collection on a passive damping system for an oscillation test device.

## // education

### PhD, Robotics & Autonomy

2026 – now

Stanford University

- › ASL (M. Pavone), with UC Berkeley (S. S. Sastry). DARPA TIAMAT.

### MSc, Robotics, Systems & Control

2024 – 2026

ETH Zürich // 5.83 / 6.0, distinction

- › Research at ETH RSL & UZH RPG. Master's thesis (6.0): *Bridging Agentic Reasoning and Structured Execution: A Behavior-Tree VLM Framework and a Fidelity-Ladder Benchmark for Embodied Agents.*

### BSc, Engineering Cybernetics

2020 – 2023

University of Stuttgart // 1.2 / 1.0, Honours

- › Control theory & dynamical systems. Thesis: automatic landing via fuzzy control.

## // projects

### Learning-based path planning

2025

ETH Robotic Systems Lab

- › Learned forward-dynamics model for safe ANYmal navigation in tight spaces.

### TD-MPC2 for Drone Racing

2024

UZH Robotics & Perception Group

- › Sample-efficient model-based RL, beating Dreamer-V3.

### Real World Robotics

2024

ETH Zürich

- › Control, simulation & imitation learning on a tendon-driven robotic hand.

### Vision Algorithms for Mobile Robotics

2024

ETH Zürich

› A full visual-odometry pipeline for localization and trajectory reconstruction.

## Concepts of Automatic Control

University of Stuttgart

2023

› Modeling, system identification & LQG control of a 3-DOF Quanser helicopter.

## // publications

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### FARM: Find Anything using Relational Spatial Memory

arXiv:2606.15476

Under review · CoRL 2026

He, Huang, Lilja, **Hübel**, Frey, Pavone, Sastry, Malik, Tomlin.

## // teaching & service

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### Stanford German Student Association (SGSA)

2026 – now

Board Member, now Vice President

### Juror & Moderator

2021 – 2024

FIRST LEGO League competitions

### Tutor

2021 – 2024

Student dormitory · private mathematics tuition

## // stack

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Python · C++ · C# · PyTorch · JAX · ROS2 · LLMs · VLMS · MuJoCo · IsaacSim · MATLAB · RL · MPC

lang: German (native) · English (IELTS 8.5) · Spanish (fluent) · French (basics)

## // awards

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🏆 **FIRST LEGO League** // 2× 1st Place Programming; World Festival 2017

🏆 **Vector Informatik Award** // BSc Honours, Engineering Cybernetics