EQUILIBRIO

SPONSORSHIP BROCHURE

Wheeliam: an agile unicycle robot built for the trail



IN COLLABORATION WITH

ETH zürich RSL Robotic Systems Lab zh aw

Inspired by athletes

Few sports showcase dynamic control quite like cross-country unicycling. Mastering rough trails, tight corners, and obstacle jumps on a single wheel requires extraordinary balance. Our mission: translating this athletic mastery into a highly agile robot.



Picture Credit: Benedikt Soja, Swinging on the Rocks | Mountain Unicycling

A new research platform

Wheeliam is our novel platform for researching dynamic and robust locomotion.

Our goal: the trail

Riding down a mountain bike trail on a single wheel.



02 THE CURRENT ROBOT

Wheeliam's features

Single wheel
Fast and efficient locomotion

Jumping mechanism
Versatile obstacle traversal

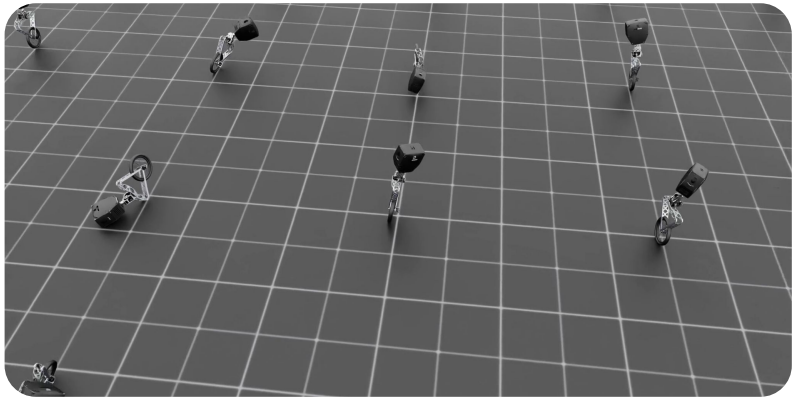
Developed by students
50+ custom parts, 100% made in Switzerland

Reinforcement learning
Locomotion using cutting-edge AI

From simulation to real-world agility

Because a unicycle has only a single point of contact, staying upright on rough terrain requires split-second, dynamic control.

Using **NVIDIA Isaac Lab**, we train thousands of virtual robots in parallel, compressing “years” of trial-and-error experience into hours before deploying the learned neural network directly onto the physical hardware.



CURRENT CAPABILITIES

- **Balancing** ✓
- **Driving** ✓
- **Jumping** ✓

Development continues in bachelor's theses

Improved balance

A more robust locomotion controller capable of riding rough, changing terrain.

Vision interface

LiDARs and cameras give the robot perception of the trail ahead.

Launch & retirement

A mechanism that lets the robot get up and come to rest on its own.

Robust torso

A new upper body with impact protection for the electronics.

New electronics

New reliable power distribution tailored to future needs.

Parkour traversal

Overcome obstacles in simulation using reinforcement learning

The team

We are a team of highly motivated young engineers from the **Mechanical and Electrical Engineering** departments at ETH Zürich and the **Systems Engineering** department at ZHAW.

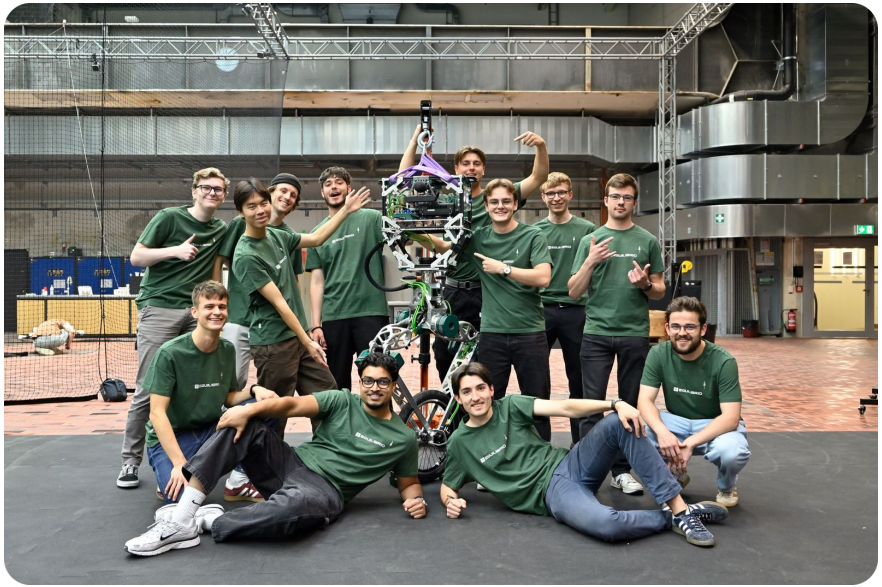
Building on the focus project, we are now driving Wheeliam into its next development phase.



SUPERVISED BY

Prof. Dr. Marco Hutter

Robotic Systems Lab, ETH Zürich



How your organization benefits

Visibility among students

Put your brand in front of a target group of young, upcoming engineers.

Ecosystem presence

Gain prominent logo placement within Zurich's thriving tech and robotics hub.

Research & education

Directly accelerate applied robotics research while enabling students to solve complex engineering challenges.

Beyond that, we would love to hear from your real-world use cases:
Do you have operations that are hazardous, ergonomically straining, or difficult to staff?

Sponsorship packages

Benefits	Patron from CHF 500.–	Silver from CHF 1'000.–	Gold from CHF 2'500.–	Platinum from CHF 5'000.–	Diamond from CHF 10'000.–
Logo on website, videos and presentations	Small	Small	Medium	Large	Large
Social media post	—	✓	✓	✓	✓
Custom text on our website	—	—	✓	✓	✓
Logo on clothing and robot	—	—	—	✓	✓
Presentation at your company event	—	—	—	—	✓

We welcome both monetary and value-in-kind sponsorships. Have a specific idea that is not listed? We'd love to hear it.

08 CONTACT

Let's talk about a partnership

We're excited to discuss how your organisation can partner with Equilibrio – reach out with any questions or sponsorship ideas.

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