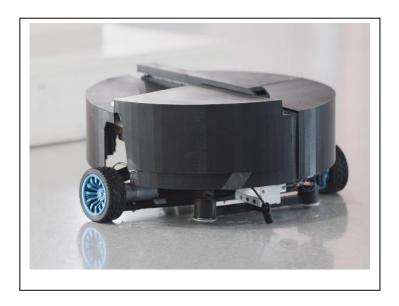
## **Stair Climbing Robot**

We develop solutions for climbing stairs. To do this, we use high-performance hardware and software, e.g. for mechanical or electrical design.

Our design prototypes are produced using different 3D printing systems.

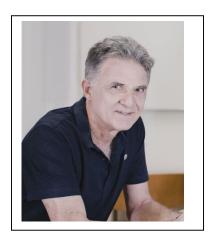


We work closely with the University of Applied Sciences in Munich.





Founder of the company HA-Consult UG (limited liability) is Prof. Dr. Dieter Haller, university lecturer at the Munich University of Applied Sciences in the faculty of applied natural sciences and mechatronics with the teaching areas of computer-aided design, CAE, simulation and calculation. He maintains close interdisciplinary cooperation with students and colleagues at Munich University of Applied Sciences.



A particularly exciting development is a vacuum robot that drives up stairs. The aim of this solution is to enable the autonomous cleaning of stairs. This functionality also allows the vacuum robot to be used on different floors. It can be charged at charging stations on different floors. This eliminates the hassle of carrying the vacuum robot around, which can be a problem especially for older people.



Presently, no vacuum robots can climb stairs. There are a few reasons for this: Compared to vacuum robots, known systems for cleaning stairs are huge. Caterpillar-based systems are also used, for example, to climb stairs. These are unsuitable for vacuum robots.





Straight staircase

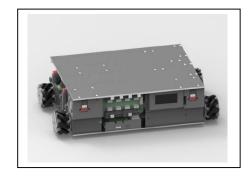
spiral staircase

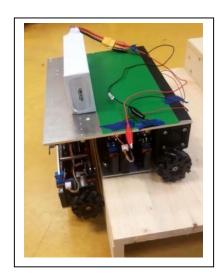
Our approach is an innovative solution for lifting and moving the robot. A German patent was granted for this. Various prototypes are currently being manufactured.

## **Further products**

Based on a technology patented in Germany, solutions for other areas of application were developed.

- Mini platform for transport smaller loads over straight and spiral staircases Scope of application: Home area with loads up to 20kg

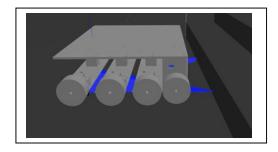




- Platform for straight stairs for transporting people and larger loads
Areas of application: large outdoor stairs, or station stairs; stairs in office and apartment buildings.



Platform to transport over spiral staircases.Scope of application: passenger transport



We don't build vacuum robots. But we provide the technology so that vacuum robots can climb stairs.

If you are interested in this technology to use in your products, we look forward to hearing from you.

www.StairRobotics.com

## **Contact:**

## **HA-Consult UG** (limited liability)

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