Start-up Master Thesis: Join in for building new Actuator technology for legged robot dynamic capabilities @ MIRMI x TUM Entrepreneurial Masterclass | Apply by **August 01**

About

Would you like to lead technology development and influence a startup direction from the start? Would you like to contribute with your technical background? As a part of your Master Thesis you will be working on progressing novel idea, while exploring the entrepreneurial context of this technology. You have a chance to join our startup after your Thesis completion as a Co-Fonuder or a Founding member.

Positions as a part of program

1. Future Co-founder/Founding member: Learning for exploiting new actuator features for legged robots
2. Future Co-founder/Founding member: System prototyping & Control Characterization of Novel Elastic Actuator

Description

Recent advancements in robotics, especially concerning humanoids and quadrupeds, are largely due to the adoption of novel actuator technologies. These technologies involve high power density BLDC motors with a lower gear ratio, with the aim of maintaining good proprioceptive feedback for control. However, active development of new actuation concepts is ongoing. One of the important directions is an augmentation of such actuators with mechanical springs for storing and releasing energy at the dynamic peaks.

Our work focuses on the development and testing of one such actuator, a version of the Parallel Elastic Actuator. We enable larger autonomous working times and bigger payload capacity for legged robots. Exploitation of elasticities is also done in the direction of robustifying the system against extreme conditions, such as falls from high altitude, impacts, etc. We will test and push the boundaries of the system!

We are supported by the TUM-MIRMI ecosystem, an interdisciplinary Institute focusing on innovation in machine intelligence with a highly applied scope.

Requirements

- Technical Background (Software Engineering / Mechanical / Electronics …)
- C1-level English
- Plus is previous active participation in some student initiative and involvement in other extracurricular activities

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Entrepreneurial Master Class Info Link
(apply via website) **Info session on July 14**