Invitation to the Oral Examination – Department CE

For the occasion of his examination for a Doctoral Degree,

Fernando Díaz Ledezma

will present his dissertation entitled

*Learning The-Self: Leveraging Proprioception to Guide
the Autonomous Discovery of the Robot Body Schema*

on **27th** **of August 2024** at **16:00 h**

Attendance to the presentation is open to the public. The presentation will be in English.

The candidate, all members of the Examination Committee, and authorized examiners of the TUM School of CIT are invited to the presentation and subsequent oral examination.

The presentation and subsequent examination will take place at Georg-Brauchle-Ring 50-66, 80992 München in room M001 and online via Zoom: https://tum-conf.zoom-x.de/j/65700017711?pwd=EVefERRg53zUWeYiz53vryONBQ15bW.1

Examination committee:

Chair: **Prof. Majid Khadiv**

First Examiner: **Prof. Sami Haddadin**

Second Examiner: **Prof. Wolfram Burgard**

Third Examiner: **Prof. Hod Lipson, Columbia University, New York, USA**

Munich, the **5th** of **August 2024**

Mailing list:

Members of the examination committee

Doctoral candidate

Abstract:

This thesis explores the potential for enhanced robot autonomy through a self-discovery-oriented body schema, proposing a unified online learning framework exclusively reliant on proprioception and leveraging structural knowledge. It infers the robot morphology and associated inertial description. The work urges reconsidering end-to-end learning for physical systems, emphasizing the need for a synergistic integration of principled knowledge and sensorimotor data.