Invitation to the Oral Examination – Department CS

For the occasion of his examination for a Doctoral Degree,

Yuan Bi

will present his dissertation entitled/on

Intelligent Robotic Ultrasound: From US Image Perception to Autonomous Sonography

on **26 May 2026** at **16:30 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 online via Microsoft Teams:

https://teams.microsoft.com/meet/363929143293 50?p=4Ke7XMt1PbhoR9PJtL

Meeting ID: 363 929 143 293 50

Passcode: r44ph7PH

and in TranslaTUM, Seminarraum EG 522.0.44, Einsteinstraße 25, 81675 München.

Examination committee:

Chair: **Prof. Dr. Cristina Piazza**

First Examiner: **Prof. Dr. Nassir Navab**

Second Examiner: **Prof. Alison Noble**

Third Examiner: **Prof. Ph.D. Mahdi Tavakoli**

Garching, the **31** of **March 2026**

Mailing list:

Members of the examination committee

Doctoral candidate

Abstract:

Ultrasound imaging is a cornerstone of modern clinical practice due to its real-time, low-cost, and radiation-free properties. However, its effectiveness is highly operator-dependent, requiring years of training to interpret complex anatomical patterns to acquire standard scan planes. This dependency introduces variability in clinical outcomes and limits access to reliable imaging, especially in underserved or high-demand settings. The development of intelligent robotic ultrasound systems that can autonomously perceive and navigate within complex anatomical environments offers a potential solution to standardize outcomes and improve access to expert-level diagnostics.