Institute for Enterprise Systems
Empowering Digital Transformation

UNIVERSITY OF MANNHEIM

Visual Human Awareness Estimation for Mobile Robots

European Master Team Project

HWS 2026

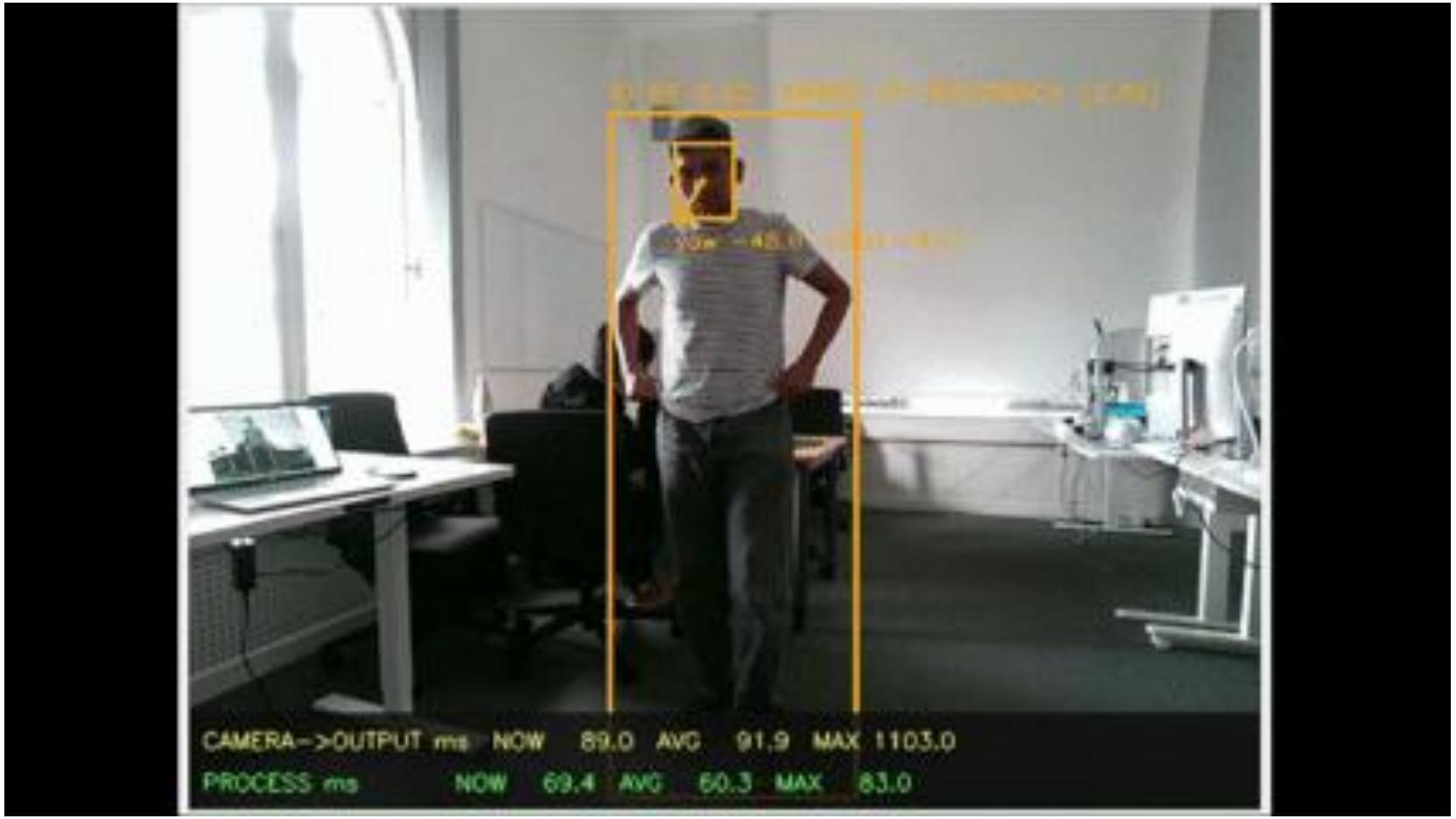
Visual Human Awareness Estimation for Mobile Robots

Research question: How can a robot recognize whether humans are aware of its presence?

Your Task:

- Development of a camera-based perception system using cues such as gaze, head and body orientation, gestures, motion, …
- Experimentation with state-of-the-art deep learning architectures for computer vision to find a solution
- Deployment of a software package that can be used by the respective robot

Visual Human Awareness Estimation for Mobile Robots



About the European Master Team Project

- Project **organized by the Institute for Enterprise Systems (InES)** in cooperation with **Babes-Bolyai University in Cluj-Napoca, Romania** and the **CORE research group at Clausthal University of Technology**
- **Duration: 6 months**
- Students from Cluj join the project for a certain period of a time to work together with you
- **Study trip to Cluj** from Novermber 11th to 19th
- **Study trip to CORE labs in Goslar** in January/February
- Opportunity to work on a highly relevant research topic in an interdisciplinary and international team environment
- Focus on applicability to a real use case
- More general information: https://www.uni-mannheim.de/en/ines/teaching/european-master-team-project/

What This Project Offers You

- Work **independently** on an **interesting and relevant** research question
- **Freedom of exploring your own solutions** and methodologies → there are requirements, but how you get there is largely up to you
- Learn to **work on a research problem** all the way from inception to deployment → valuable for your future studies and career
- Work in an international team and expand your horizon with funded **trips to Cluj-Napoca and the robotics lab in Goslar**

Who This Project Is For

- You have knowledge of at least one programming language (Python) and version control systems (Git), knowledge of deep learning libraries like PyTorch is advantageous
- You should be enthusiastic about machine learning and computer vision
- You want to sharpen your data science expertise while developing a software solution that has real impact instead of just being relevant for a single project grade
- You have strong analytical thinking skills and enjoy working both independently and in a team

Send your transcript of records and CV (optional) to: tim.karges@uni-mannheim.de

Application deadline: September 11th, 2026, 8:00 PM

Further Information

https://www.core-network.ai/ai-team-projects/human-awareness-detection

https://www.uni-mannheim.de/ines/lehre/european-master-team-project/visual-human-awareness-estimation-for-mobile-robots/