

## Ethical Considerations of Kinesthetic Learning for AI-powered Companion Robots

### Background

Kinesthetic teaching is part of the teaching from demonstration methods applied in robotics. Those methods are inspired by imitation learning and aim to teach the robot what to do, without coding, but by showing it the actions. In kinesthetic teaching, a demonstration is given by physically manipulating the robot. Kinesthetic Teaching enables the end-user to personalise the robot's skills to their needs and clearly understand its knowledge.

### Expected Goals

Drawing upon scientific and journalistic literature, the studies proposed here aim to define ethical guidelines in kinesthetic teaching for AI-powered companion robots. Those robots aim to be used in homes to support everyday tasks. Considerations will have to be drawn regarding limitations and risks, the opportunities of implementing such technology, and the defined characteristics to be fulfilled to reach acceptable risk and ethicality of the product. Possible methodologies include a systematic review of the literature or interview design with experts in robotics and ethics.

### Details

Supervisors: Auxane Boch (TUM IEAI) & support Camille Vindolet (TUM ICS)  
Starting date: as soon as possible

### Contact

If you are interested, please get in touch with Auxane Boch ([auxane.boch@tum.de](mailto:auxane.boch@tum.de)) with a CV, transcript, and a short first idea on tackling this topic.

We are looking forward to your application!