



## Kolloquium zur Masterarbeit

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### **„Investigating dynamic trust factors and the role of feedback credibility in a human-robot collaborative disassembly scenario“**

With the enormous development in the field of robotic technology, Human-Robot collaboration is increasingly becoming significant in many industries. With this development comes the role of trust between a human and a robot. Trust needs to be calibrated in order to extract maximum efficiency in the interaction between the human and the robot. Especially in a co-located and synchronous environment such as an industry. The focus is on the dynamic evolution of trust during both the accumulation and the dissipation phases. The factors that drive the dynamic trust accumulation and dissipation between a human and a robot in an industrial scenario needs to be identified. Additionally as suggested by previous literature, feedback from the robot also plays a very important role in the evolution of trust.

An experiment is conducted to find out the factors that influence the dynamics of trust during accumulation and dissipation in a collaborative scenario and to find out how the feedback efficiency from the robot affects the trust in a human. The identified factors will be essential for the purpose of feeding them into a computational model that allows the robot to adapt its behavior according to the operator or human's level of trust. The experiment is done with a total of 32 participants. The experiment involves the participants interacting with a physical robotic arm(Panda) in order to assemble and disassemble used car batteries in an industrial scenario. Based on questionnaires both during and after the experiment, the factors affecting dynamic evolution of trust are extracted and the impact of feedback accuracy are identified. The results point out that the factors that affect trust accumulation are different from the factors that affect trust dissipation. The feedback accuracy has a varying impact on trust based on the robot's behavior.

**Mittwoch, 19. Januar 2022, 15:30 Uhr**

**Videokonferenz: BBB** <https://webconf.tu-clausthal.de/b/mic-n9m-x9f>