

EENX15-21-14 Let's help our doctors! Human-Robot Collaboration

Problembeskrivning

There are different industrial and service sectors that required efficient human and robot collaborations. For example, the health-care sector, where humans are still performing physically strenuous and sometimes dangerous work. In this case, robots should also consider the safety of the human while proving assistance, especially in dangerous situations. For example, in a hospital, the robot needs to identify the tasks that can be dangerous to the human and take those roles when splitting the tasks. For instance, in the case of a pandemic emergency, the robot could assist nurses by bringing food or medicine to the patients, thus exposing the health-care personal to a minimum.



Problembeskrivning

In this thesis, the students will design and develop a variety of different methods in the areas of machine learning, reasoning, decision-making, control, and robotics. They will develop learning and control methods to allow robots to reason about complex situations in order to ensure high performance and safety for the human co-worker. Then, the learned models will be transferred into a virtual mobile robot (e.g. the TIAGo robot) to interact with humans in a virtual scenario.

- Målgrupp:** TKAUT, TKMAS, TKELT, TKDAT, TKTFY,
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