

# Human-Robot Co-existence

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1<sup>st</sup> July 2016

# Implement Human-Avoiding Robot Path-Planning

This seminar work will be part of an ongoing project to investigate provably safe robot path planning. The exact topic is to be determined but is likely to be in one of the following areas, depending on the state of the project next semester:

- implementation of existing/new path-planning approaches around human,
- integration of sensors (e.g. camera) with robot controller to sense human,
- conducting trials on humans with different collision-avoidance strategies.



**Figure:** Robot avoiding human. Zanchettin & Rocco, 2013

# Your requirements

This semester work will be largely practical. You should therefore have:

- Understanding of/experience with real-time communication protocols (e.g. from lecture *Echtzeitsysteme* by Mr. Hashemi, Dr. Mendoza Garcia & Prof. Knoll),
- Experience with MATLAB/Simulink – or – experience with C++,
- Understanding of robot kinematics (e.g. from lecture *Robotics* by Prof. Burschka)
- *Desirable but not necessary*: experience with programming robots

## Interested?

Or do you have another idea for a seminar topic in Human-Robot Co-existence?

Contact me with your year of study, relevant courses you have taken and relevant skills!

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