

Human-Robot Interaction

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Sensing the Human

How do robots know that humans are nearby?



Figure: Setup of HRC space with sensing from multiple Kinect sensors: Lenz et Al., 2012, Fusing multiple Kinects to survey shared Human-Robot-Workspaces

- Cameras
- Proximity Sensory
- Capacitance Sensors
- Collision detection
- Humans vs. other objects

Intention Recognition

What does the human want to do?

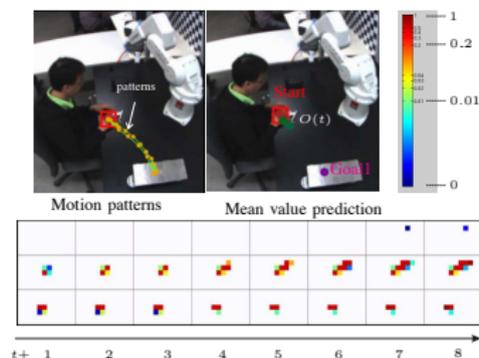


Figure: Predicting human movement from Hidden Markov Models. Ding et. al, 2012. Online Computation of Safety-Relevant Regions for Human Robot Interaction

- When a collision is detected... is it intentional or not?
- Interpreting human movements, e.g. which object are they reaching for?
- Do I need to move out of the way?
- Facial expressions
- Eyeball tracking

Interested?

Or do you have another idea for a topic in Human-Robot Interaction?

Contact me!

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