



# imec

INTERNET OF *ROBOTIC THINGS*

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# INTERNET OF *ROBOTIC* THINGS

## TAMING THE OPEN-ENDED, DYNAMIC WORLD



Task generation



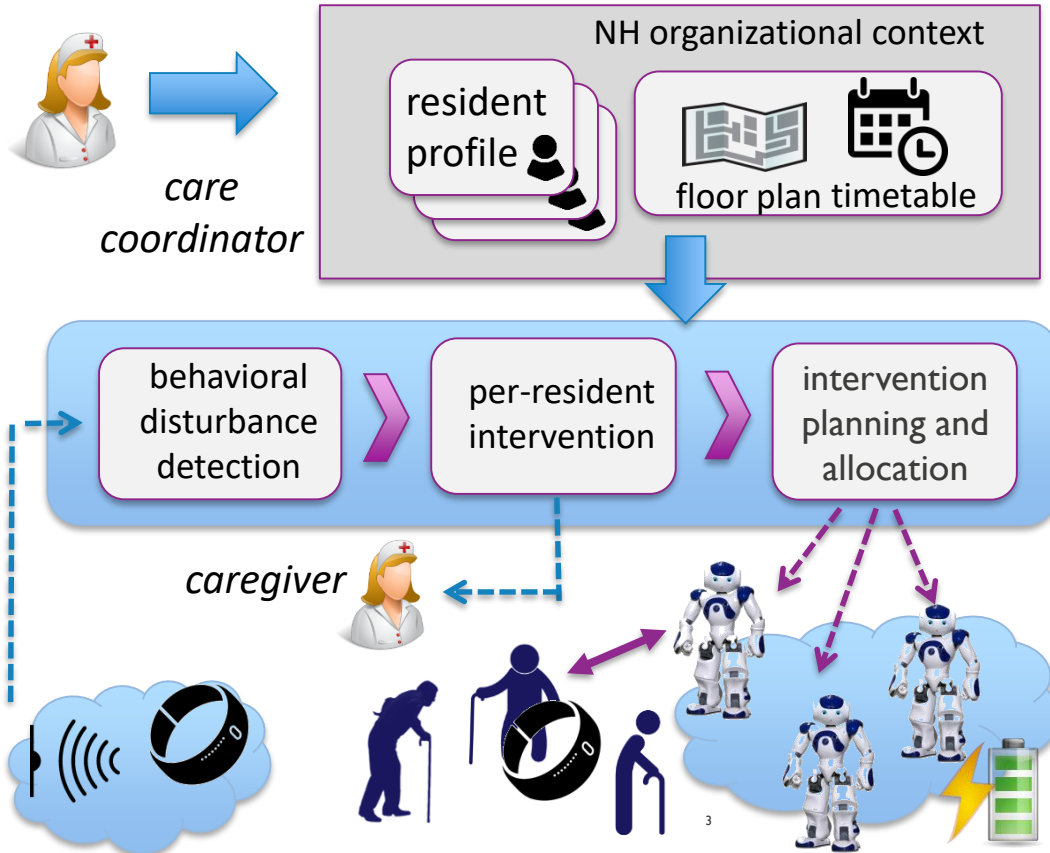
Task planning



Task execution

# PERSONALIZED INTERVENTIONS FOR ALLEVIATING BEHAVIOR DISTURBANCES

## 24/7 CAREGIVER SUPPORT IN NURSING HOMES



### Task generation

- ▶ Recognition of behavioral disturbances from sensors and wearables
- ▶ Ontology reasoning for personalized intervention strategy

### Task planning

- ▶ Person tracking for path planning
- ▶ Activity recognition for tailored interventions

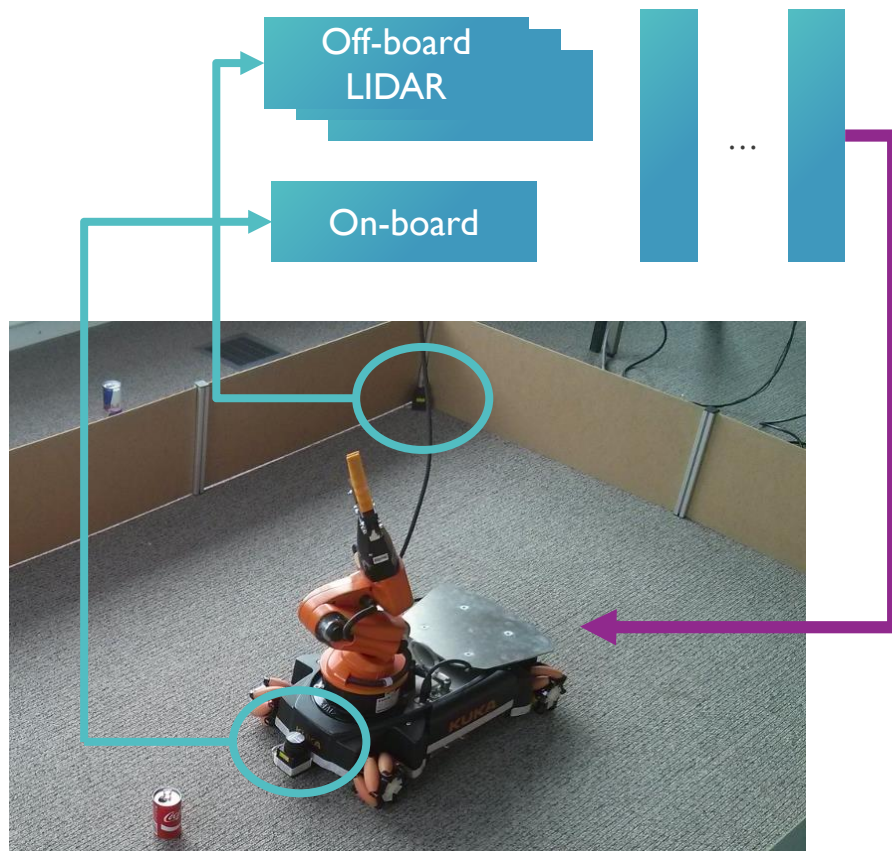
# IOT SENSOR FUSION FOR ROBOT CONTROL

## MODULAR DEEP REINFORCEMENT LEARNING



OSGI-based middleware for robots, sensors and the cloud

<http://dianne.intec.ugent.be>



### Task execution

- ▶ Deep Q-learning
- ▶ Fusion of on-board and off-board sensors
- ▶ Modular approach

# INTERNET OF ROBOTIC THINGS

## CONTACT DETAILS

Task generation



Task planning



Task execution



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