

Humanoid robots in healthcare- a friend or an enemy?





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- PhD candidate at Uia :
How Humanoid robots can assist users with disabilities in activities of daily living
- Projectmanager HIRO:
Human Interactive Robotics for Healthcare
- Projectmanager ARIS
Arm-robotics for Stroke Rehabilitation

Humanoid Robots in Healthcare



Pepper. Aldebaran
united robotic
group



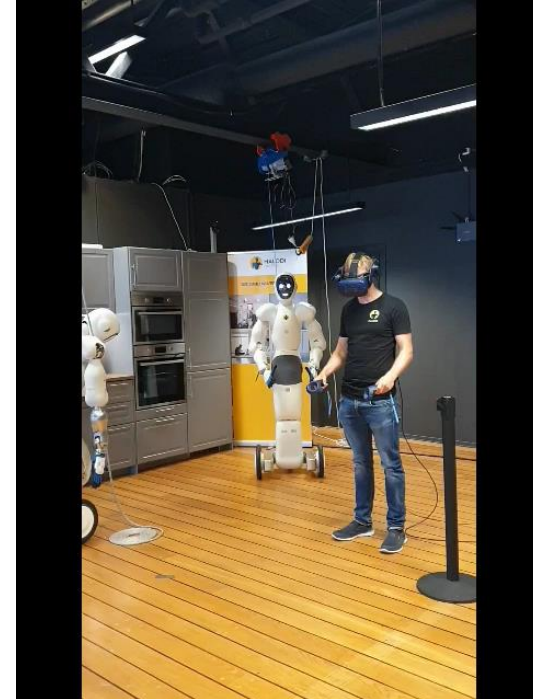
Care Obot 3.
Fraunhofer IPA



EVE. 1X
technologies

What can they do ?

- Automated
- Controlled



The Hobbit Project

- Bring objects
- Shopping assistance
- Entertainment
- Exercise
- Reminders
- Monitor
- Alarm



Pripfl, Frennert, Eftring 2014

The Robot-Era project

- Doro
 - Communication
 - Indoor Escort service
 - Reminders
 - Cleaning
 - Object transportation and manipulation
- Oro
 - Outdoor walking support
- Coro
 - Laundry support
 - Food delivery
 - Surveillance
- Drug and shop delivery
- Garbage collection



Cavallo et al 2014

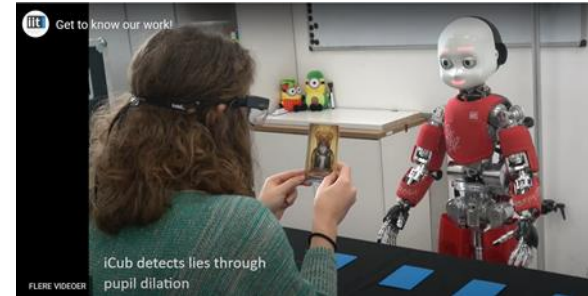
But still not implemented

- Programming simple tasks is easy
 - People are complex
 - Robots are expensive
 - Implementation processes are difficult
- What is the research field doing

PERSONALIZATION

Human Robot Interaction Research

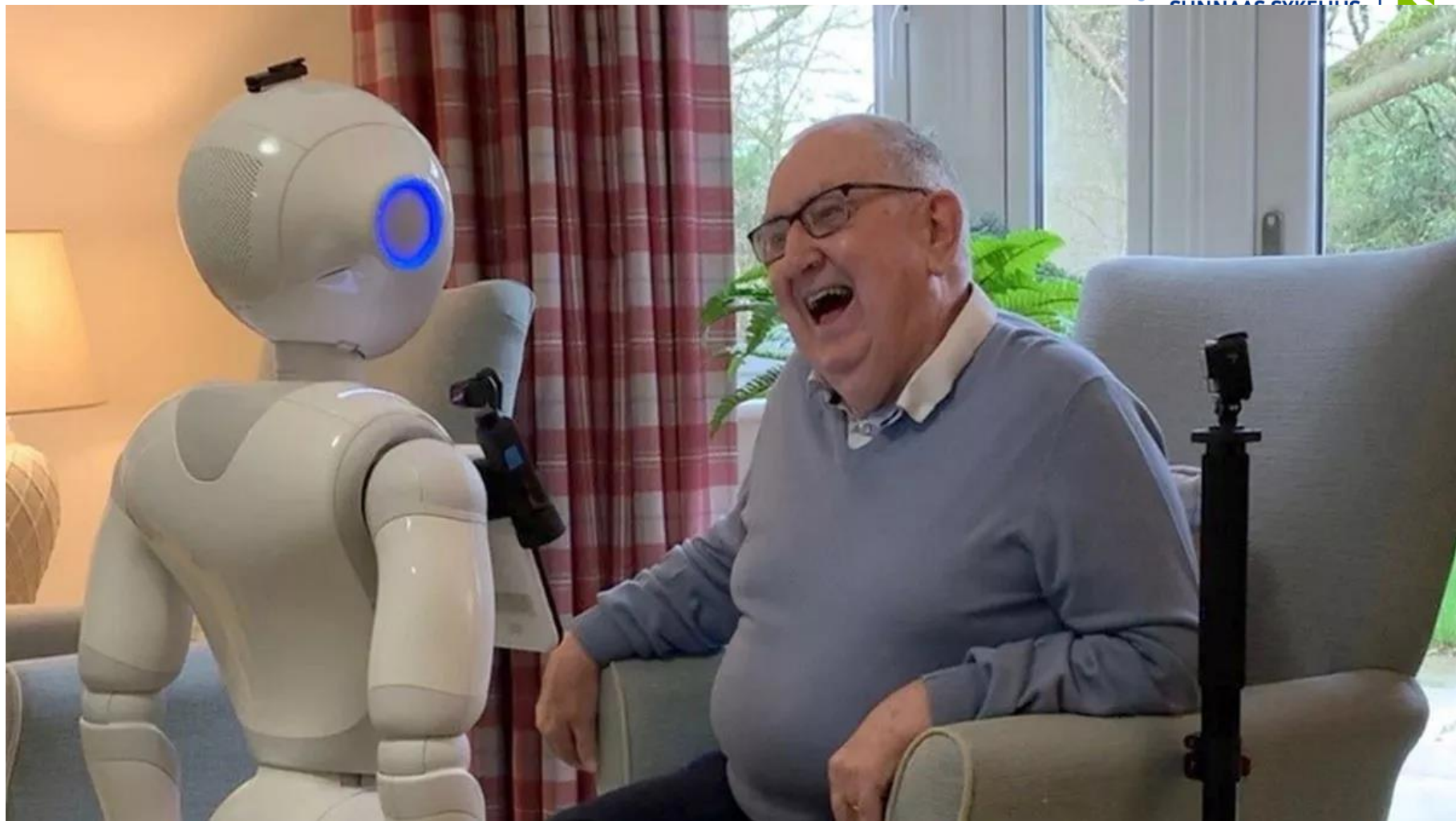
- Trust
 - Failures
- Gaze
- Voice
- Gender
- Proactive
- Anthromorphism
- Touch
- Culural differences
- Understanding human emotions and behaviour



Understanding human emotions and behaviour

- Holthaus et al – Kaspar robot
 - learning tool for children with autism
 - Communication and social interaction
 - Turntaking
 - Visual perspective taking







SKIEN KOMMUNE



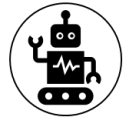
Project Team

Human Interactive Robotics for Healthcare

Norwegian Research Council - Innovation Project



Identification of user needs and requirements



Development of the robotics solution



Human-robot interaction: healthcare staff & patients



Innovation realization and assessment



Data collection with health personel



<https://vimeo.com/711675375/9aa22fe198>

Datacollection: Getting a drink of water Personalized



Thank you



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References

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Pictures

- Slide 1, 2, 3, 4, 15, 17 <https://www.1x.tech/>
- Slide 3: Pepper. Aldebaran united robotic group
- Slide 3: Care Obot3. Fraunhofer IPA
- Slide 5: Pripfl, Frennert, Eftring 2014
- Slide 6: Cavallo et al 2014
- Slide 8: [Home - COgNiTive Architecture for Collaborative Technologies – IIT](#)
- Slide 10: Holthaus P, et al. 2023 Kaspar explains The effect of causal Explanations on visual perspective Taking Skills in Children with Autism Specter disorders. IEEE -ROMAN conference proceedings
- Slide 12: [Available soon: Sex robots with artificial intelligence - Los Angeles Times \(latimes.com\)](#)
- Slide 13: [Robots found to improve mental health and loneliness in elderly people - Mirror Online](#)
- Slide 17: <https://www.magicmobility.com.au/upgrades/chin-control/>. Etac.no