Exam Booklet

Lecture Number: 02

Lecture Name: Structuring and Analyzing HRI

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Common language to describe HRI scenario using standard terminologies TAXONOMY

Onnuch & Roesler (2021)

LAYER 1 Interaction Context

→ Robot Illustration
→ Field of Application : Industry, Service, military, space, ed, entertainment, None, Therapy.
→ Exposure to : robot _ embodied _ depicted
→ Setting: field _ Lab

LAYER 2 Robot Classification

→ Task Specification : Info exchange, precision, load reduction, transport, manipulation, stimulation — cognitive / emotional / physical
→ Morphology : Appearance, Communication, movement, Context — Anthropomorphic [X] / Zoomorphic [X] / technical [V]
→ Degree of robot autonomy — low to High
↳ info acquisition, analyses, decision making, action implementation

LAYER 3 Team Classification

→ Human Role :
Supervisor - Monitor & give instructions
operator - Controls the robot
collaborator - Same Goal Same subgoals
cooperator - Same Goal different subtasks
bystander - No interaction, but share same space

→ Team Composition
$N_H = N_R$
$N_H < N_R$
$N_H > N_R$

→ Comm. Channel
I/O : Robot → Human

Electronic	Tactile [Vibrate]
Mech	Acoustic
Acoustic	Visual
Optical	

→ Proximity
→ Following ÷ Physical Contact (PC)
→ Touching : Same Workspace with PC
→ Approaching : Same Workspace but No PC
→ Passing : Workspaces overlap & contact is prevented
→ Avoiding : Workspace Not close & contact is avoided
↳ None : Work in different environments