

Cloud-Based Social Robotics

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<https://www.facebook.com/groups/aicit/>

MI – MACHINE INTELLIGENCE



Founded in 1995

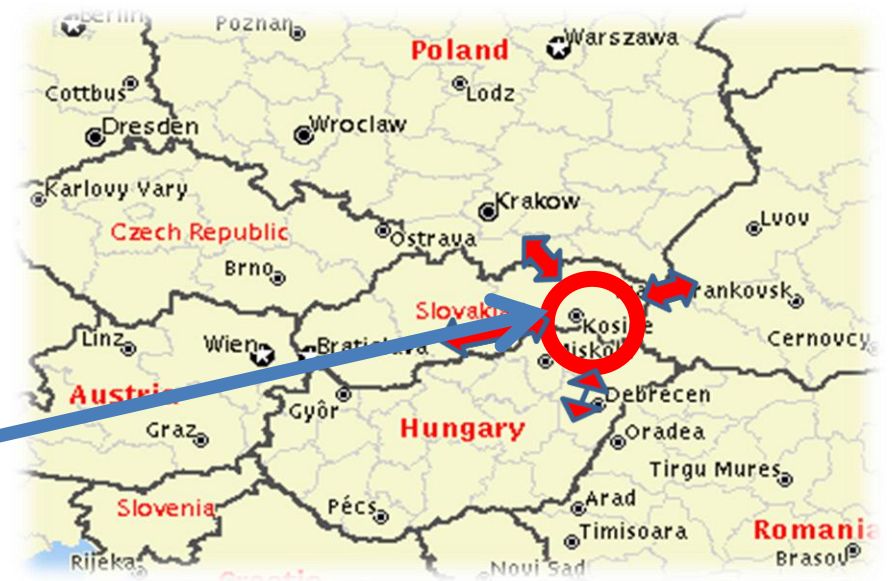
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**AGENTÚRA
NA PODPORU
VÝSKUMU A VÝVOJA**

Where are WE Located at ???



History

Slovakia ... where Czech writer Karel Čapek and his brother Jozef invented the word "ROBOT" ☺

Trencianske Teplice, SK, Hotel PAX



Staff & equipment

- **One professor**
- **4 assistant professors**
- **8 PhD students**
- **20 MSc. Students**
- **20 BSc. Students**



17 NAO Robots, 2 Stereo-heads, 2 AIBO Robots ...

Robots & Elderly

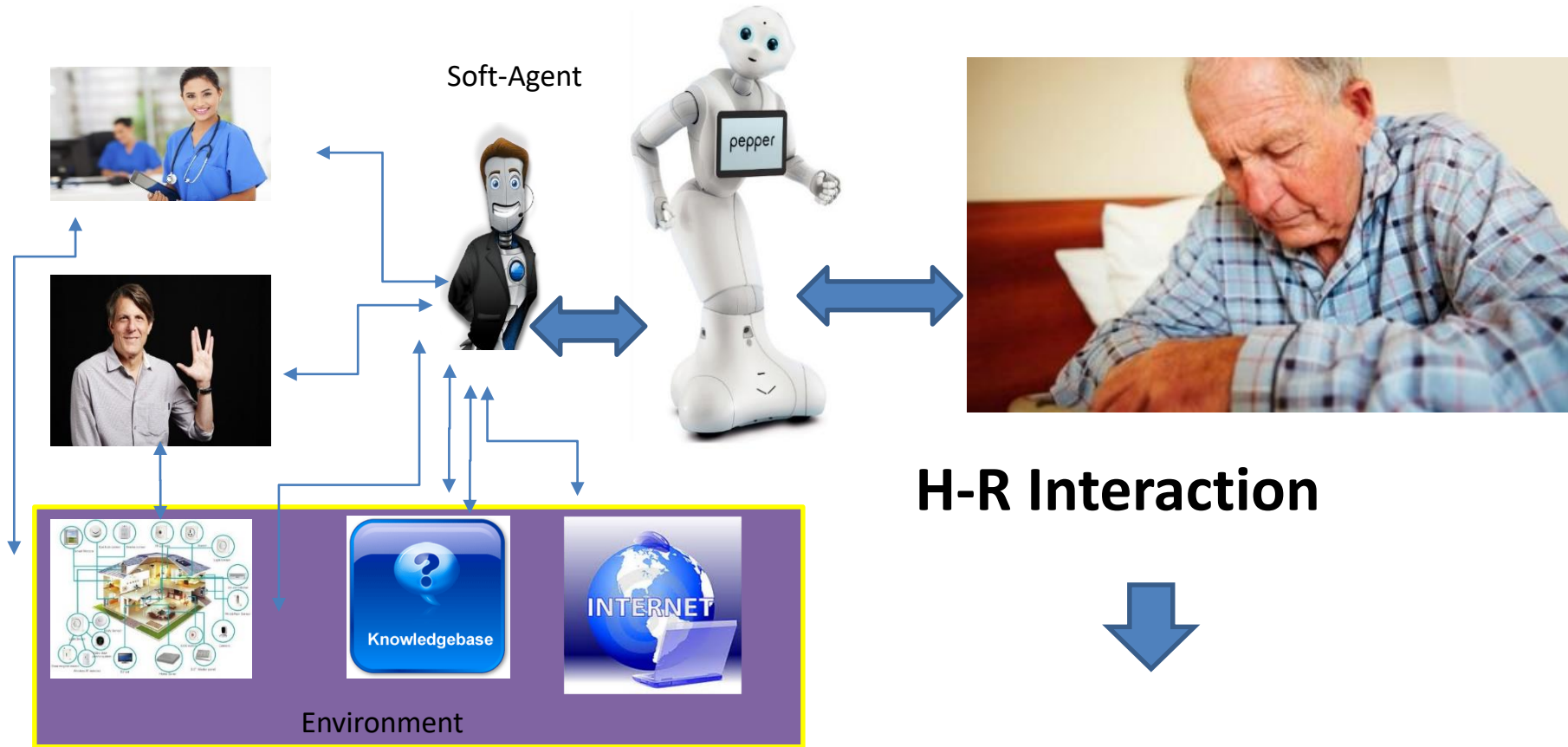


Cognitive Exercise with Elderly

Changing Life of Therapist

<https://www.youtube.com/watch?v=n5uJlZmN6Vw>

Human-Robot Interaction – new paradigm - What is Wizard of Oz



What is a Robot ??



Classical Robot Concept

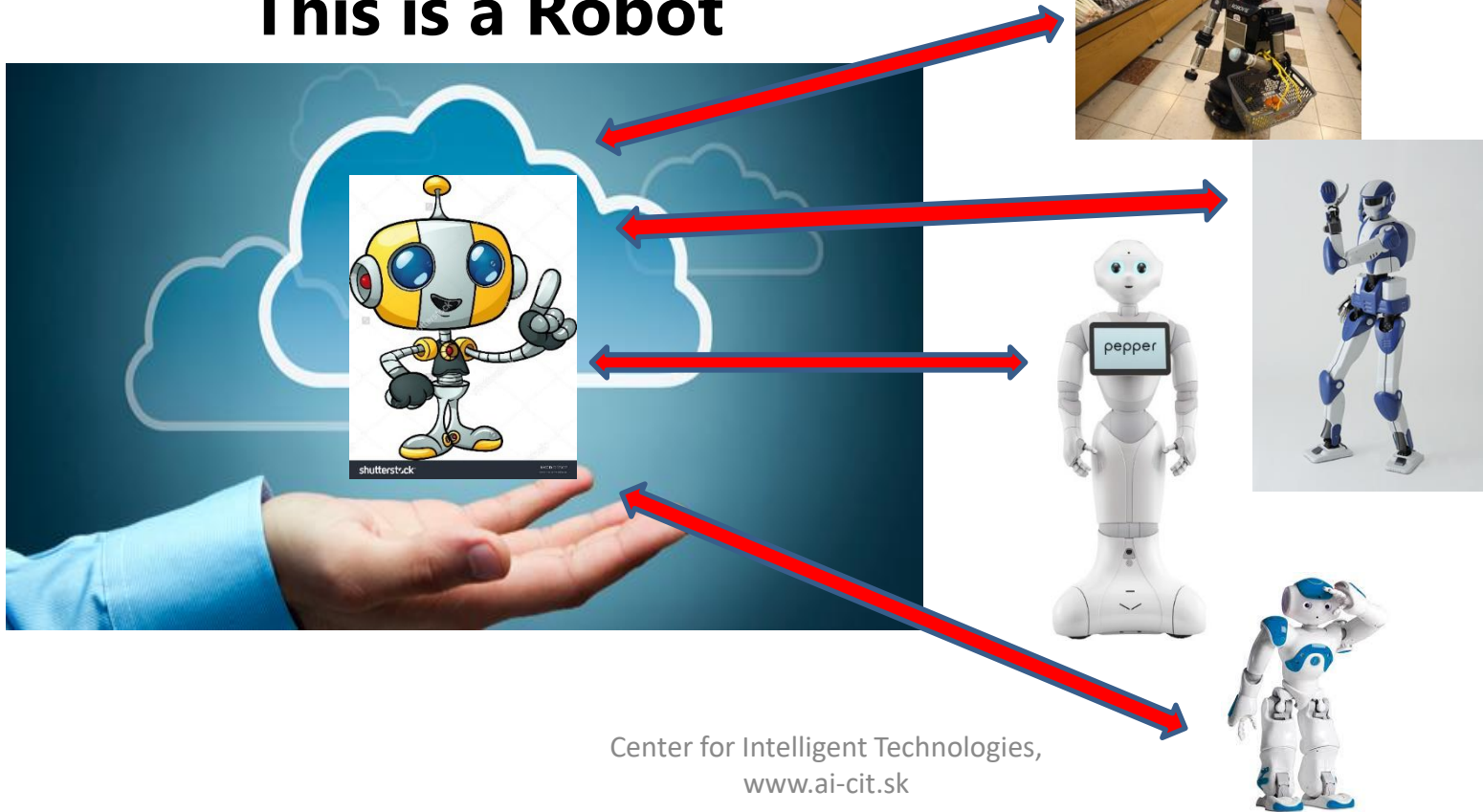
This is a Robot !!!!



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Virtual Robot Concept ???

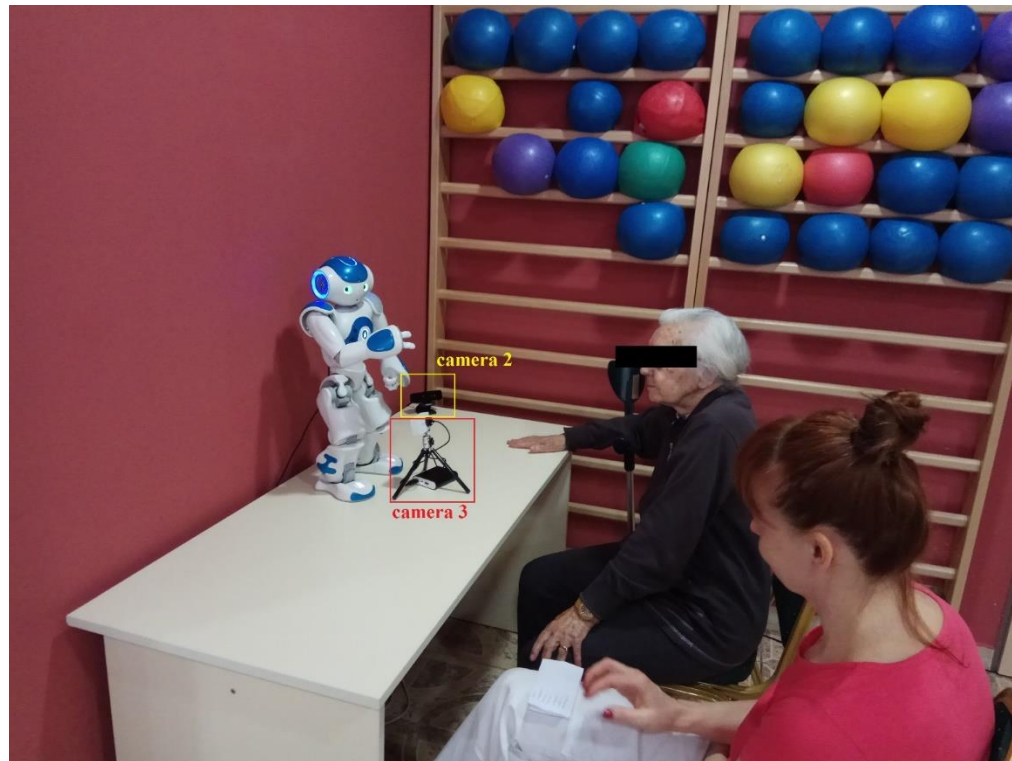
This is a Robot



CLOUD-BASED REINFORCEMENT LEARNING

- Publicly available algorithms without the need of installation
- Scalability
- Combine unique models into a general one
- Building a knowledge base by multiple users
- Sharing the knowledge between multiple robots
- Creating personalized robot behavior
- Accessible from the web or locally

COGNITIVE EXERCISES WITH ELDERLY

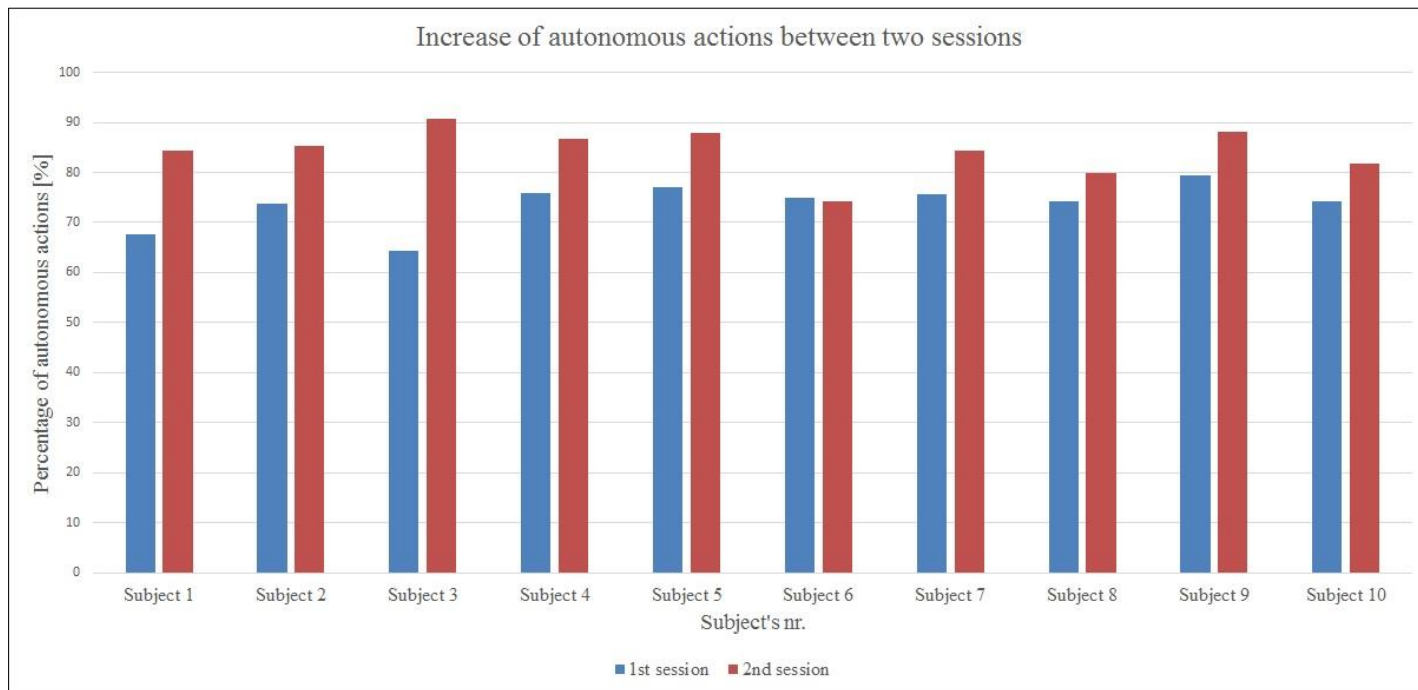


COGNITIVE EXERCISES WITH ELDERLY Interface on the Cloud

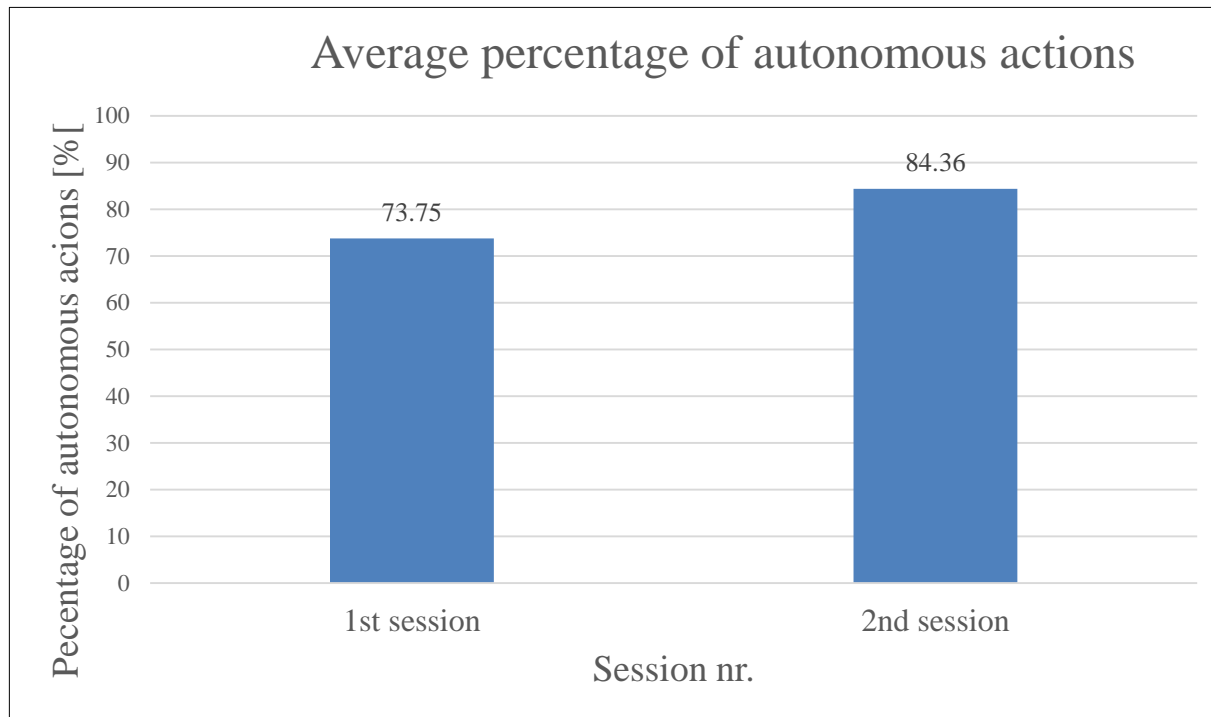
python

Intro	End			Last state:	Other
Letter A (easy)	Letter B (easy)	Help A	Help B	New state:	Correct answer
Letter C (easy)	Letter D (easy)	Help C	Help D	Reward:	<div><div></div></div>
Letter E (hard)	Letter F (hard)	Help E	Help F	<input type="button" value="Learn"/>	
Letter H (easy)	Letter J (easy)	Help H	Help J	Suggested action:	Applause
Letter K (medium)	Letter M (easy)	Help K	Help M	<input type="button" value="Approve"/>	
Letter N (medium)	Letter P (easy)	Help N	Help P	<input type="button" value="Correct answer"/>	<input type="button" value="Doesn't know"/>
Letter R (medium)	Letter S (medium)	Help R	Help S	<input type="button" value="Incorrect answer"/>	<input type="button" value="Other"/>
Letter V (hard)		Help V			
Applause 1	Applause 2	Sorrow 1	Sorrow 2		
Applause 3	Applause 4	Sorrow 3	Sorrow 4		
Applause 5	Applause 6	Sorrow 5	Sorrow 6		
			<input type="button" value="Say"/>		

COGNITIVE EXERCISES WITH ELDERLY



COGNITIVE EXERCISES WITH ELDERLY



Conclusion

We see enormous potential in Cloud Based Robotics
and building AI for Social Robots using
Cloud Infrastructure for
HUMANS

