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Platforms for End User Development of Internet of Things and Humanoid Robot Applications



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University Course: Progettazione di Interfacce e Valutazione dell'Usabilità



Group

6 Researchers
1 Associate Professor
2 Post-Doc fellows
2 Research fellows
1 PhD Student
3 Master Thesis Students
1 Technician



Торіс

- Human Computer Interaction
- End User Development for IoT
- Human Robot Interaction
- Accessibility Usability Evaluation
- Emotion Based User Interface
- Cross devices User Interface

End User Development in IoT Scenarios



Interactive devices and intelligent objects with different objectives installed in different contexts



Impossible to foresee at design time which devices and objects users will exploit, how they will be organized and in which situations and for which objectives they will be used.



Empower end users to easily and independently customize the behaviour of their IoT applications.

Solution Trigger – Action Rules

End User Development in IoT Scenarios





Possible Thesis

Recommender System for adaptation rules: personalized recommendations to help users in rule definition by combining the content-based approach (rules already created) and the collaborative one (which rules you are interested in)

Conversational Interfaces

Conversational interfaces enable people to interact with smart devices using conversational spoken language

It is a combination of automatic speech recognition (ASR) for converting speech to text, natural language understanding (NLU) to recognize the intent of the text and text to speech (TTS) to provide answers to the users

Possible Thesis

Voice bot for creating personalization rules

Voice bot to know the status of sensors in the home and to be informed when a sensor changes state



Conversational Interface and Learning Environment for children with Autism Spectrum Disorders (ASD)



Augmented/Mixed Reality

Augmented reality (AR) is an interactive experience of a real-world environment where the objects that placed in the real world are enhanced by computer-generated information.

Possible Thesis



Augmented Reality application that shows IoT devices, allows to control them and displays the associated personalization rules



Elderly Assistance using Augmented Reality



We are looking forward to receive new proposals!





Pepper Robot



Pepper



Help and support for seniors and children with disabilities

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Training through the use of **games**

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Emotion and Face Recognition. It makes the gaming experience more personal User involvement through emotions

A REAL

Reproduces feedback through arm movements and bright LEDs and sounds



Possible Thesis



We developed a musical game for memory stimulation of older adults, we would like to add the voice modality and to provide the robot with conversational skills. People want to talk with pepper!



Develop a game to help children with autism spectrum disorder in learning how to manage money



Develop a multimodal application in order to stimulate positive emotions



Social Robot for Children Education



Let us know your proposal!

References

Lab Web Site: http://hiis.isti.cnr.it/

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