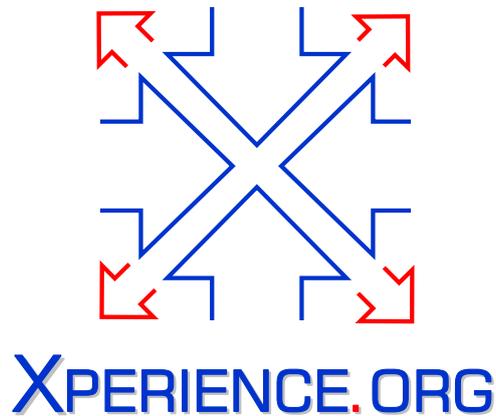




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Chapter 1

Executive Summary

This document provides a summary on the Xperience Summer School 2013. The Summer School was shifted to the third reporting period. This deliverable is to some degree delayed due to the fact that the school only took place recently.

We had 16 international speakers which gave lectures on different topics including perception & action, learning, cognitive vision, developmental robotics, humanoid robotics, developmental and cognitive psychology, language acquisition, and some more (see detailed programme).

In total, we had 39 student participants where 12 selected students presented their work orally and the rest 27 students presented their work in an interactive poster session. In the evenings we also had informal interactive sessions with speakers.

Chapter 2

Description of the Summer School

2.1 Aim

The European Project Xperience (www.xperience.org) organized a summer school for international students in the field of Cognitive Robotics. The aim of school was to bring together scholars from Robotics and Cognitive Science in a program, which would allow the interested students to learn about the cross-links between these fields and discuss topics with leading scientists. The school was mainly intended for PhD-Students and young PostDocs.

2.2 Resume

The summer school took place on October 2-5, 2013, in Hotel Sentido Castell de Mar, Cala Millor, Mallorca. In total we had 65 participants including students, invited speakers and PIs (see attached list of participants).

We had 16 international speakers which gave lectures on different topics including perception & action, learning, cognitive vision, developmental robotics, humanoid robotics, developmental and cognitive psychology, language acquisition, and some more (see attached programme).

In total, we had 39 student participants where 12 selected students presented their work orally and the rest 27 students presented their work in an interactive poster session. In the evenings we also had informal interactive sessions with speakers.

In general the feedback we received from the participants was that this was considered a very successful and fruitful event and especially the students told us that they had benefitted substantially from this. A sign of this success was that the poster session, which was supposed to end at 9:30pm, lasted until 11pm and we had to actually tell people to finally leave and stop discussing.



Figure 2.1: Pictures from Xperience Summer School 2013: group photo at the beach (above) and poster session (below).

2.3 Programme of the Summer School

October 2nd

	Session & Name	Title
8:00-8:15	Introductory Remarks	
	beyond Motion	
8:15-9:15	Florentin Wörgötter	AI and Cognitive Robotics
9:15-10:15	Yiannis Demiris	Recognizing and Assisting Human Actions: a hierarchical, predictive approach
10:15-10:30	Coffee	
10:30-11:30	Ales Ude	Dynamic systems in robot skill learning
11:30-13:00	Informal interactive session with speakers	
13:00-14:00	Lunch	
	beyond Vision	
14:00-15:00	Ales Leonardis	Hierarchical Compositional Representations for Computer Vision
15:00-16:00	Antonis Argyros	Tracking hands and hand-object interactions
16:00-16:30	Coffee	
16:30-17:30	Lourdes Agapito	Reconstructing non-rigid scenes from a single camera
17:30-18:15	Elena Ceseracciu	Tool-use generalization on the iCub humanoid platform
	Miha Denisa	Synthesizing new control policies in a hierarchical database
	Severin Fichtl	Learning spatial relations between objects from 3D scenes
18:30-19:30	Dinner	
19:30	Informal interactive session with speakers	

October 3rd

	Session & Name	Title
	Humans&Robots	
8:00-9:00	Frank Guerin	Mechanisms underlying infants' bootstrapping of physical world knowledge and object manipulation skills
9:00-10:00	Kerstin Fischer	Humans and robots
10:00-10:15	Coffee	
10:15-11:15	Bruno Sicilano	Grasping and Control of Multi-fingered Hands
11:15-13:00	Informal interactive session with speakers	
13:00-14:00	Lunch	
	Communication	
14:00-15:00	Angelo Cangelosi	Embodiment and Language Acquisition in Humanoid Robots
15:00-16:00	Katerina Pastra	Robots need a Semantic Memory: Going beyond one-shot learning in Robotics
16:00-16:30	Coffee	
16:30-17:15	Bradley H. Hayes	Social hierarchical learning
	Matteo Menna	Learning the dynamic process of inhibition and task switching in robotics cognitive control

	David Schiebener	Physical interaction for autonomous segmentation and grasping of unknown objects by a humanoid robot
18:00-19:00	Dinner	
19:30		Informal interactive session with speakers

October 4th

	Session & Name	Title
	Structural Bootstrapping in Xperience	
8:30-9:15	Tamim Asfour	The Xperience Project: What is Structural Bootstrapping?
9:15-10:00	Mohamad Aein	A library of manipulation actions based on semantic object relations
	Aris Valtazanos	Decision shaping in multi-robot interactions
	Hanchen Xiong	Homogeneity analysis for object-action relation learning
Free time		
17:30-18:30	Bernhard Hommel	Integrating perception and action
18:45-19:45	Dinner	
20:00-21:30	Poster Session	Poster Session with beer, wine (softdrinks....), and nibbles

October 5th

	Session & Name	Title
	Cognition	
8:00-9:00	Tom Henderson	Symmetry and Structural Bootstrapping
9:00-10:00	David Vernon	Navigating the mazes of autonomy & embodiment in cognitive systems
10:00-10:15	Coffee	
10:15-11:15	Fiora Pirri	Flexible planning, high level control and task switching
11:15-13:00		Informal interactive session with speakers
13:00-14:00	Lunch	
	Systems	
14:00-15:00	Gordon Cheng	Xperience in building humanoid systems
15:00-16:00	Mark Lee	A psychology based approach for longitudinal development in cognitive robotics
16:00-16:30	Coffee	
16:30-17:30	Helge Ritter	Manual action - from single functions to systems
17:30-18:15	Jeremie Papon	Segmentation and tracking of objects in pointclouds
	Maria Vanessa aus der Wieschen	Improvement of the Marvin platform
	Emre Ugur	Parental scaffolding as a bootstrapping mechanism for learning imitation skills
18:30-19:30	Dinner	
19:30-20:30		Informal interactive session with speakers
20:30	Farewell Party	Hope you enjoyed it

2.4 List of participants

	Name	E-mail	University
	Invited Speakers		
1	Demiris, Yiannis	y.demiris@imperial.ac.uk	Imperial College London
2	Leonardis, Ales	ales.leonardis@fri.uni-lj.si	University of Birmingham
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PIs/Organizing team

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In total 65 participants