

Designing an Emotional Basis for Aibo

Cognitive Interaction with Robots

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1 Introduction

- Description

2 Aibo

- Requirement analysis.
- Cognitive Architecture.
- Planning

3 Conclusions



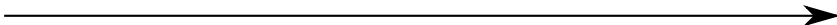
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Problem.

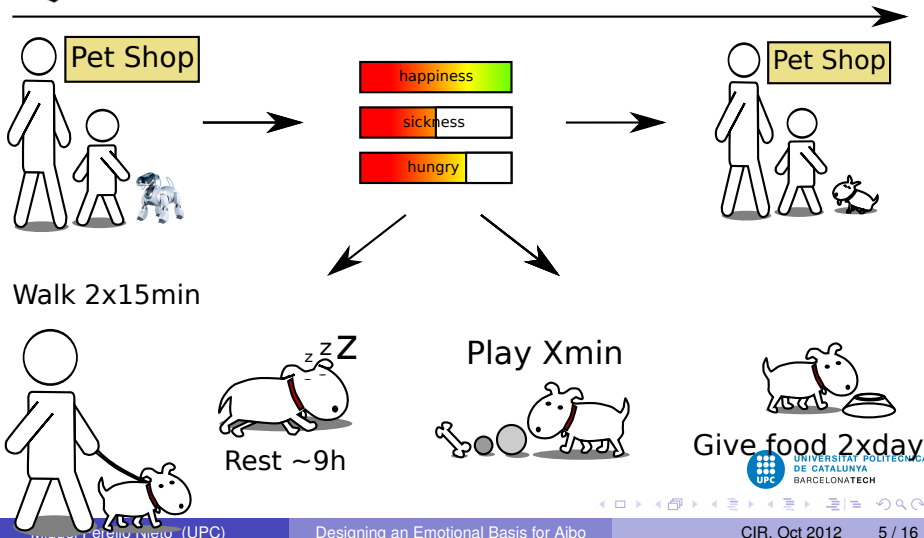


some months



Description

Solution.



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Overview.

Platform Aibo

Social Context Family

Physical Scenario Home environment

Social Scenario Pet that needs care

User Profile Target Child that need to be responsible

Roles Pet



Interaction.

● Modality of Interaction

- Motion
- Touching sensors
- Speaking
- Gestures

● Robot Ressources for Interaction

- Camera
- Infrared
- Paw sensors
- microphones
- touch sensors
- head, legs, tall, ears
- LED pannel
- speakers



Quality.

● Metrics to Assess Interaction

- Time in different emotions
- User feedback
- Parents feedback

● Quality

- Engagement of the child
- Attitude
- User satisfaction



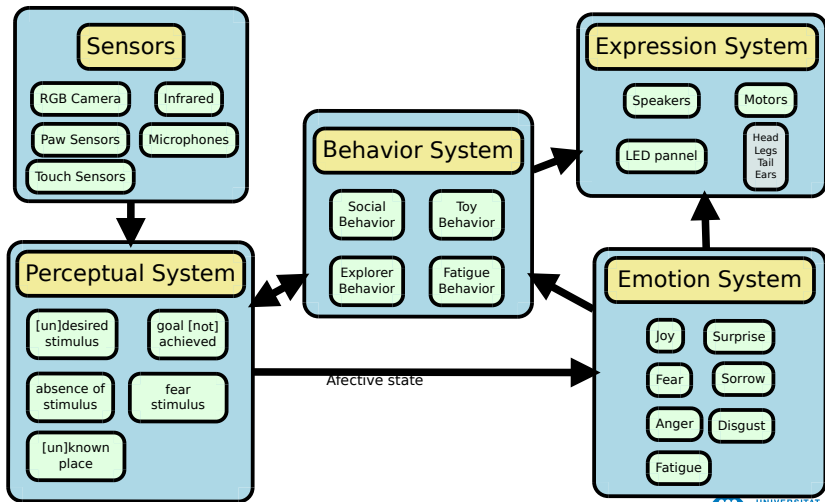
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Cognitive Architecture.

Cognitive Architecture.



* Some ideas from Kismet cognitive architecture

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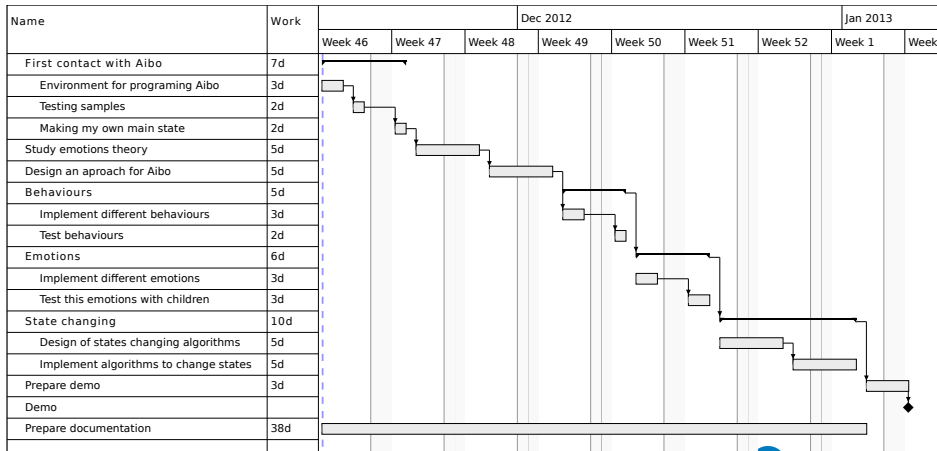
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Planning

Gantt.



Times.

WBS	Name	Start	Finish	Work	Duration	Slack	Cost	Assigned to	% Co
1	First contact with Aibo	Nov 12	Nov 20	7d	7d	34d	0		0
1.1	Environment for programing Aibo	Nov 12	Nov 14	3d	3d		0		0
1.2	Testing samples	Nov 15	Nov 16	2d	2d		0		0
1.3	Making my own main state	Nov 19	Nov 20	2d	2d		0		0
2	Study emotions theory	Nov 21	Nov 27	5d	5d		0		0
3	Design an aproach for Aibo	Nov 28	Dec 4	5d	5d		0		0
4	Behaviours	Dec 5	Dec 11	5d	5d		0		0
4.1	Implement different behaviours	Dec 5	Dec 7	3d	3d		0		0
4.2	Test behaviours	Dec 10	Dec 11	2d	2d		0		0
5	Emotions	Dec 12	Dec 19	6d	6d		0		0
5.1	Implement different emotions	Dec 12	Dec 14	3d	3d		0		0
5.2	Test this emotions with children	Dec 17	Dec 19	3d	3d		0		0
6	State changing	Dec 20	Jan 2	10d	10d		0		0
6.1	Design of states changing algorithms	Dec 20	Dec 26	5d	5d		0		0
6.2	Implement algorithms to change states	Dec 27	Jan 2	5d	5d		0		0
7	Prepare demo	Jan 3	Jan 7	3d	3d		0		0
8	Demo	Jan 7	Jan 6	N/A	N/A	1d			0
9	Prepare documentation	Nov 12	Jan 3	38d	38d	2d	0		0



Conclusions.

- An effort for child.
- Time to think if he wants an animal.
- Finally fewer abandoned animals.



Bibliography I

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