

Towards a robotic mind by cognitive architectures

Ignazio Infantino

ICAR - CNR, Viale delle Scienze ed.11, Palermo, Italy
ignazio.infantino@cnr.it

Abstract

We

Introduction

Towards a robotic mind by cognitive architectures (7; 24; 17; 9; 4; 20; 10; 8; 15; 3; 5; 23; 25; 16; 14; 6; 12; 13; 26; 1; 2; 22; 21; 18; Chella et al.; Infantino et al.)

Future work

References

Augello, A., Infantino, I., Pilato, G., Rizzo, R., and Vella, F. (2013a). Binding representational spaces of colors and emotions for creativity. *Biologically Inspired Cognitive Architectures*.

Augello, A., Infantino, I., Pilato, G., Rizzo, R., and Vella, F. (2013b). Introducing a creative process on a cognitive architecture. *Biologically Inspired Cognitive Architectures*.

Caci, B., Cardaci, M., Chella, A., D'Amico, A., Infantino, I., and Macaluso, I. (2005). Personality and learning in robots. the role of individual motivations/expectations/emotions in robot adaptive behaviours. *Want and Like: Motivational and Emotional Roots of Cognition and Action*, page 17.

Chella, A., Cossentino, M., Infantino, I., and Pirrone, R. (2001). An agent based design process for cognitive architectures in robotics. *Proc. of Workshop on Objects and Agents, WOA*, 1.

Chella, A., Dindo, H., and Infantino, I. (2005a). Anchoring by imitation learning in conceptual spaces. *AI*IA 2005: Advances in Artificial Intelligence*, pages 495–506.

Chella, A., Dindo, H., and Infantino, I. (2005b). A cognitive framework for learning by imitation. *ICRA05 workshop on the Social Mechanisms of Robot Programming by Demonstration*.

Chella, A., Dindo, H., and Infantino, I. (2006a). A cognitive framework for imitation learning. *Robotics and Autonomous Systems*, 54(5):403–408.

Chella, A., Dindo, H., and Infantino, I. (2006b). Learning high-level tasks through imitation. In *Intelligent Robots and Systems, 2006 IEEE/RSJ International Conference on*, pages 3648–3654. IEEE.

Chella, A., Dindo, H., and Infantino, I. (2007). Imitation learning and anchoring through conceptual spaces. *Applied Artificial Intelligence*, 21(4-5):343–359.

Chella, A., Dindo, H., and Infantino, I. (2008). A cognitive approach to goal-level imitation. *Interaction Studies*, 9(2):301–318.

Chella, A., Guarino, D., Infantino, I., and Pirrone, R. An high-level vision system for the symbolic interpretation of dynamic scenes by the arsom neural networks. *Machine Learning in Computer Vision*.

Chella, A. and Infantino, I. (2004). Emotions in a cognitive architecture for human robot interactions. *Architectures for Modeling Emotion: Cross-Disciplinary Foundations*.

Chella, A., Infantino, I., and Macaluso, I. (2003). Conceptual spaces and robotic emotions. In *Systems, Man and Cybernetics, 2004 IEEE International Conference on*, volume 1, pages 144–149. IEEE.

Dindo, H. and Infantino, I. (2006). Representation, recognition and generation of actions in the context of imitation learning. *European Robotics Symposium 2006*, pages 65–77.

Gaglio, S., Infantino, I., Pilato, G., Rizzo, R., and Vella, F. (2011). Vision and emotional flow in a cognitive architecture for human-machine interaction. In *BICA*, pages 112–117.

Infantino, I. (2012). Affective human-humanoid interaction through cognitive architecture. In *The Future of*

Humanoid Robots - Research and Applications, ISBN: 978-953-307-951-6. pages 147–156. InTech.

Infantino, I., Chella, A., Dindo, H., and Macaluso, I. (2005).

A cognitive architecture for robotic hand posture learning. *Systems, Man, and Cybernetics, Part C: Applications and Reviews, IEEE Transactions on*, 35(1):42–52.

Infantino, I., Chella, A., Džindo, H., and Macaluso, I.

(2003). A cognitive system for human interaction with a robotic hand. *First RoboCare Workshop*, page 63.

Infantino, I., Lodato, C., Lopes, S., and Vella, F. Implementation of an intentional vision system to support cognitive architectures.

Infantino, I., Lodato, C., Lopes, S., and Vella, F. (2008).

Human-humanoid interaction by an intentional system. In *Humanoid Robots, 2008. Humanoids 2008. 8th IEEE-RAS International Conference on*, pages 573–578. IEEE.

Infantino, I., Pilato, G., Rizzo, R., and Vella, F. (2011).

A cyc-based web system for semantic organization, search and browsing of knowledge items. In *Complex, Intelligent and Software Intensive Systems (CISIS), 2011 International Conference on*, pages 571–576. IEEE.

Infantino, I., Pilato, G., Rizzo, R., and Vella, F. (2013a).

Humanoid introspection: A practical approach. *Int J Adv Robotic Sy*, 10(246).

Infantino, I., Pilato, G., Rizzo, R., and Vella, F. (2013b).

I feel blue: Robots and humans sharing color representation for emotional cognitive interaction. In *Biologically Inspired Cognitive Architectures 2012*, pages 161–166. Springer Berlin Heidelberg.

Macaluso, I., Ardizzone, E., Chella, A., Cossentino, M.,

Gentile, A., Gradino, R., Infantino, I., Liotta, M., Rizzo, R., and Scardino, G. (2005). Experiences with cicerobot, a museum guide cognitive robot. *AI* IA 2005: Advances in Artificial Intelligence*, pages 474–482.

Pilato, G., Rizzo, R., Vella, F., and Infantino, I. (2012).

Human-robot interaction based on introspective capability. In *Complex, Intelligent and Software Intensive Systems (CISIS), 2012 Sixth International Conference on*, pages 461–468. IEEE.

Ruisi, A., Cossentino, M., Infantino, I., Chella, A., and Pirrone, R. (2002).

A cooperative agent based architecture for environmental exploration and knowledge sharing by vision. *IROS-2002 Workshop on Cooperative Robotics-October*, 1.