

Carole Adam, PhD

Detailed Curriculum Vitæ

1 Presentation

PhD and engineer in Computer Science, I am actually ATER (“Attaché Temporaire d’Enseignement et de Recherche”, assistant teacher and researcher) in Toulouse in France. I teach in ENSEEIHT, a french engineer school, and I do research in the LILaC team (Language, Interaction, Logic and Computation) at the Computer Science Research Institute of Toulouse (IRIT), a laboratory affiliated to the French National Scientific Research Center (CNRS).

Research interests:

Psychological theories of emotions; formalisation of emotions; embodied conversational agents; modal logics of beliefs, desire, intentions and action; Ambient Intelligence; believable agents for virtual worlds.

2 Contact

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3 Education and degrees

July 10, 2007, National Polytechnical Institute, Toulouse, France

PhD in Computer Science with grade “très honorable” (very honorable, highest possible grade in the Computer Science and Telecommunications Doctoral School)

Hosting laboratory: IRIT

September 2003, Paul Sabatier University, Toulouse, France

Master in Artificial Intelligence, with grade "bien" (honorable, second highest possible grade)

Hosting Laboratory: IRIT

June 2003, ENSEEIHT, Toulouse

Engineer degree in Computer Science and Applied Mathematics

4 Spoken languages

French native tongue

English fluent (930 points out of 990 at the TOEIC)
(Test of English for International Communication)

Spanish intermediate level

Japanese beginner

5 References

Yves Demazeau (Yves.Demazeau@imag.fr)

CNRS Research Director, Grenoble, France

Fabrice Evrard (fabrice.evrard@enseeiht.fr)

Associate Professor, ENSEEIHT, Toulouse, France

Andreas Herzig (herzig@irit.fr)

CNRS Research Director, IRIT, Toulouse, France

Dominique Longin (longin@irit.fr)

CNRS Research Fellow, IRIT, Toulouse, France

John-Jules Meyer (jj@cs.uu.nl)

Professor, University of Utrecht, Netherlands

6 Research activities

PhD Thesis

Title

Emotions: from psychological theories to logical formalization and implementation in a BDI agent. (*The dissertation is written in English*)

Supervisor

Andreas Herzig (CNRS Research Director at IRIT, Toulouse, France)
Dominique Longin (CNRS Research Fellow at IRIT, Toulouse, France)
Fabrice Evrard (Associate professor at ENSEEIHT, Toulouse, France)

Reviewers

Catherine Pelachaud (Professor at University of Paris 8, France)
John-Jules Meyer (Professor at University of Utrecht, Netherlands)
Yves Demazeau (CNRS Research Director, Grenoble, France)

Other members of the jury

David Sadek (PhD-engineer, France Telecom R&D, Lannion, France)
Emiliano Lorini (PhD-engineer, ISTC Rome, Italy and IRIT Toulouse, France)
Robert Demolombe (CNRS Research Director, associate researcher at IRIT, Toulouse, France)

Summary

My dissertation is about the formalisation of emotions. It is structured in three parts. The first begins with the understanding and comparison of some of the main psychological theories of the triggering of emotions; then I justify the usefulness of emotions for virtual agents and argues in favour of a logical modelling of emotions. The second part consists of building a formal logical framework (actually a propositional modal logic) expressive enough to formalise emotions while staying quite standard, and sound and complete. I then propose the logical definitions of twenty emotions from the OCC typology (Ortony, Clore and Collins, 1988) in this logical language. Finally I proved a number of theorems about emotions by reasoning on these definitions. In the third part I expose some applications and extensions of this model. I performed two case studies in Ambient Intelligence and in virtual worlds. I also describe the implementation of this model in a virtual agent that emotionally responds to stimuli virtually sent by the user (through their description in the interface). I used this agent to conduce evaluations with human users and gives some results of this evaluation. Finally I propose an extension of this model to formalise the influence of emotions on the behaviour of an agent, in terms of coping strategies. This thesis has thus been a cross-disciplinary project involving aspects from psychology, philosophy, logic and computer science, and opening interesting application prospects.

Participation to projects

Project of the National Research Agency on trust

This project started in January 2007 and aims at formalising the concept of trust. In particular trust has an emotional component. This project involves several laboratories in France.

A reasoning platform for intelligent agents

The objective of this project is to design an implementable rational agent platform from a logical theory. This project involves several teams of IRIT.

Collaboration with team GRIC

The team GRIC (Research Group on Cognitive Engineering) has developed a 3D virtual world for the training of firemen, who control an avatar in this world. We propose to give emotions to the autonomous agents that inhabit this world in order to make their behaviour more realistic.

This project gave rise to a presentation during a seminar about Embodied Conversational Agents.

Other activities

Member of the working group on Embodied Conversational Agents

This working group meets about twice a year, researchers present their ongoing work. We also organise the workshop WACA once a year.

Member of the HUMAINE network

(HUman MACHine Interaction Network on Emotion)

Secondary reviewer for various conferences

Including MFI'07, MFI'05, SOFSEM'07, ECSQUARU'07

Awards

JFSMA'06 (French-speaking conference about multi-agent systems)

Best paper award.

7 Previous experience in the organization of workshops

October 2006, WACA'06, Toulouse, France

I have been chairwoman of the organisation committee of this French workshop about Embodied Conversational Agents. It gathered about fifty researchers from various French laboratories during two days.

May 2006, Doctoral Consortium, Toulouse, France

I have participated in the organisation of the annual doctoral consortium of my doctoral school. This consortium allows PhD students to present their work to other students and senior researchers during two days.

8 Publications

International peer-reviewed conference and workshop papers

- Carole Adam, Dominique Longin. Endowing emotional agents with coping strategies: from emotions to emotional behaviour. Poster in proceedings of Intelligent Virtual Agents (IVA 2007), Springer Verlag, to appear. Paris, France, September 2007.
- Carole Adam, Benoit Gaudou, Andreas Herzig, Dominique Longin. OCC's emotions: a formalization in a BDI logic. In proceedings of AIMSA'06, Springer Verlag. Varna, Bulgaria, September 2006.
- Carole Adam, Benoit Gaudou, Andreas Herzig, Dominique Longin. A logical framework for an emotionally aware intelligent environment. ECAI workshop AITAmI (Artificial Intelligence Techniques for Ambient Intelligence). August 2006.

The following publications are in French, but I translate the information in English here. The original bibliography can be found on my web page.

National journal papers

- Carole Adam, Andreas Herzig, Dominique Longin. PLEIAD: an emotional agent to assess the OCC typology. (30 pages.) In the French journal of Artificial Intelligence (RIA), special issue "Multi-Agent Models for Complex Environments". Hermès Sciences Publications. 2007 (to appear).

National peer-reviewed conference and workshop papers

- Carole Adam, Benoit Gaudou, Andreas Herzig, Dominique Longin. Logical modelling of rational agents for Ambient Intelligence. Best paper award. French-speaking Conference about Multi-Agent Systems (JF-SMA'06). Hermès Sciences Publications. Annecy, France, October 2006.
- Carole Adam. PLEIAD: a module to manage the emotions of an Embodied Conversational Agent. In proceedings of the French workshop on Embodied Conversational Agents (WACA'06). Toulouse, France, Oct 2006.
- Carole Adam, Fabrice Evrard. A model of the emotional dialogue between the user and the machine. Doctoral consortium paper. In annex of proceedings of the Conference on Human-Machine Interfaces (IHM'05). International Conference Proceedings Series, ACM Press. Toulouse, France, September 2005.
- Carole Adam, Fabrice Evrard. Endow conversational agents with emotions. In proceedings of the French workshop on Embodied Conversational Agents (WACA'01). Grenoble, France, June 2005.

Submitted papers

- Carole Adam, Dominique Longin, Andreas Herzig. A BDI formalization of the OCC typology of emotions. Submitted to an international journal. March 2007.

Research reports

The full version of the following research reports can be downloaded in pdf from my web page.

- Carole Adam, Dominique Longin. Endowing emotional agents with coping strategies: from emotions to emotional behaviour. Research report IRIT_RR-2007-15-FR. IRIT, June 2007. *(in English)*
- Carole Adam, Dominique Longin. Coping strategies in a BDI logic: How can agents do to drop their negative emotions. Research report IRIT_RR-2006-25-FR+ENG. IRIT, October 2006. *(in English)*
- Carole Adam, Fabrice Evrard, Benoit Gaudou, Andreas Herzig, Dominique Longin. A simple logical framework for emotional agents. Research report IRIT_RR-2006-16-FR. IRIT, February 2006. *(in English)*
- Carole Adam, Fabrice Evrard. Appraisal around a knowledge base: application to general intelligent behavior simulation. Research report IRIT_RR-2006-02-FR. IRIT, November 2005. *(in English)*
- Carole Adam, Fabrice Evrard. GALAAD: a conversational emotional agent. Research report IRIT_2005-24-R. IRIT, October 2005. *(in English)*
- Carole Adam, Fabrice Evrard. Towards an optimal model of emotions: a review of existing models. Research report IRIT_2005-15-R. IRIT, June 2005. *(in French)*
- Carole Adam. Structure and Simulation of Dialogue. Master dissertation. IRIT, Toulouse. September 2003. *(in French)*

9 Presentations

Conferences

27 October 2006, WACA'06, Toulouse, France

PLEIAD: a module to manage the emotions of an Embodied Conversational Agent. *(in French)*

18 October 2006, JFSMA'06, Annecy, France

Logical modeling of rational agents for Ambient Intelligence. *(in French)*

13 September 2006, AIMS'A'06, Varna, Bulgaria

OCC's emotions: a formalization in a BDI logic. (*in English*)

27 September 2005, IHM'05 Doctoral Consortium, Toulouse, France

A model of the emotional dialogue between the user and the machine.
(*in French*)

13 June 2005, WACA'01, Grenoble, France

Endow conversational agents with emotions. (*in French*)

Seminars at IRIT (in French)

22 September 2006

The emotions: a logical formalisation faithful to psychology.

23 May 2006

Computer Science and Telecommunications Doctoral School Symposium
Logical modelling of rational agents for Ambient Intelligence.

2 June 2005

Endow conversational agents with emotions.

1er Mars 2004

Modelling of dialogue. Demonstration of our dialogue simulation software.

Other presentations

4 July 2006, Autrans, France

Summer school "dialogue and interaction"
The logical modelling of emotions. (*in French*)
I also presented a poster there.

15 November 2005, Paris, France

Meeting of the working group on Embodied Conversational Agents
GALAAD: an emotional conversational agent (*in French*)

26 October 2004, Paris, France

Meeting of the working group on Embodied Conversational Agents
Endow conversational agents with an emotional behaviour. (*in French*)

13 Mars 2004, Universidad Autonoma de Aguascalientes, Mexico

Summer Congress of Computer Science (CECIC'04)
Invited speaker for the closing conference of the congress
Artificial Intelligence: an overview of techniques and applications. (*in English*)