Call for paper

The 2nd Symposium on Human Memory for Artificial Agents

A one day symposium in conjunction with the AISB 2011 Convention

*(The symposium is supported by the European FP7 Project **LIREC**)*

Since decades ago the idea of creating computational representation of experience for agents has been mentioned often in cognitive modelling literatures. On one hand, researchers in the early 90's argued, in the context of the Turing Test, that it is questionable whether any computer in the future can pass the Test without the ability to experience. On the other hand, embodied AI emphasizes the on-going interaction between agents and their environment, in which object representation evolves from the experience of the agents with these objects. Here the term "experience" is not as defined in machine learning, but as similar to the whole cognitive concept of human memory. It includes a range of cognitive processes that our memory operates effortlessly: perceiving, encoding, storing, retrieving, generalising and forgetting of events.

Up to date, various research projects have attempted to create agents that are more natural, believable and behave in human plausible ways; however, memory components in these models are rather static and loosely connected to each other. Another direction which has captured a lot of attention is the influence of emotion in long-term episodic memory. It is important to identify the possible ways of integrating various known emotion models to artificial agents with computational human memory, particularly those designed for social interactions with human users. Additionally, many existing models do not take into consideration the bio-mechanisms of human memory operations such as those involved in retrieval and forgetting processes.

Some recent research shows that artificial agents equipped with a subset of the above listed human memory processes are perceived as more natural and have the potential of improving human-agent interaction. Consistent with these findings, we envision that the existence of more comprehensive human-like memory processes will allow artificial agents to maintain behaviour coherence and plausibility, thus may lead to the establishment of longer term interaction/relationship with humans.

Back in AISB 2010, the 1st Symposium on Human Memory for Artificial Agents brought together researchers from the fields of cognitive science, artificial intelligence, and the social sciences to discuss important aspects of human memory suitable to be modelled in artificial intelligent agents. To continue this direction of creating a better understanding of human memory and its roles in modelling artificial cognition and social processes, more efforts are required to investigate the interactions between its essential components such as short-term, working memories, semantic knowledge and episodic experiences among others.

This symposium aims to gather interdisciplinary perspectives on the above issues and review work done so far to achieve a better understanding of which, when and how human-like memory can contribute to artificial agents modelling.

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Topics of interest include but are not limited to:

- Role of memory in artificial agents
- Type of memory and application
- Memory and emotion modelling
- Representation and generalization of experiences
- Human-agent/human-robot interaction history
- Effective memory data collection
- Privacy issues related to data collection
- Bio-inspiration to memory modelling
- Memory mechanisms for encoding, storage and retrieval
- Memory influence on reasoning and decision-making
- Modelling forgetting in episodic memory
- Ethological aspects of memory
- Spatial memory
- Memory and adaptation

Submission

We are seeking submissions of **original papers (up to 8 pages - with finished work and original research results)** and **short papers (up to 5 pages - position papers with work-in-progress research)** that fit well with the symposium theme and topics. Papers should be submitted through the EasyChair system. You will have to register with EasyChair if you do not have an account already. Please submit your paper in PDF format (according to the AISB 2011 formatting guidelines - templates available on the AISB 2011 convention website). All submissions will be peer reviewed. Authors of accepted contributions will be asked to prepare the final versions for inclusion in the symposium proceedings. At least one author of each accepted paper will be required to register and attend the symposium to present their work.

Important Dates

~~**3rd January 2011**: Submission deadline of full-length paper~~
~~**25th January 2011 (extended)**: Notification for paper acceptance~~
(NEW) 10th February 2011: Deadline for papers required resubmission
25th February 2011: Submission of camera-ready final papers
4th April 2011: Symposium

Program Committee:

(Confirmed)
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Official Website

http://homepages.feis.herts.ac.uk/~comqwch/HMAA11.html

Contact

Dr. Wan Ching Ho
STRI, University of Hertfordshire,
College Lane, Hatfield, AL10 9AB, UK
Email: W.C.Ho@herts.ac.uk
Homepage: http://homepages.feis.herts.ac.uk/~comqwch/
Tel: (44) 170 7285111 Fax: (44) 170 7284185

Dr. Mei Yii Lim
Computer Science, Heriot-Watt University, Riccarton, EH14 4AS, UK
Email: M.Lim@hw.ac.uk
Homepage: http://www.macs.hw.ac.uk/~myl/
Tel: (44) 131 4514162 Fax: (44) 131 4513327

Dr. Cyril Brom
Department of Software and Computer Science Education
Faculty of Mathematics and Physics , Charles University in Prague
Email: brom@ksvi.mff.cuni.cz
Homepage: http://ksvi.mff.cuni.cz/~brom/