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Refereed Article

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Managing Context in a Conversational Agent

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Abstract: *This paper describes a conversational agent, called ProBot, that uses a novel structure for handling context. The ProBot is implemented as a rule-based system embedded in a Prolog interpreter. The rules consist of patterns and responses, where each pattern matches a user's input sentence and the response is an output sentence. Both patterns and responses may have attached Prolog expressions that act as constraints in the patterns and can invoke some action when used in the response. The main contributions of this work are in the use of hierarchies of contexts to handle unexpected inputs. The ProBot is also interesting in its link to an underlying engine capable of implementing deeper reasoning, which is usually not present in conversational agents based on shallow parsing.*

Publication and review history

This work was first presented at the Machine Intelligence 18 Workshop, held on September 19-21, 2001 at the University of York, UK. Attendance at this workshop was based on invitations. Speakers at the workshop were invited to submit their articles for consideration in the forthcoming workshop volume. The subsequent publication and review history for the present article was as follows.

1. First versions *published* by Linköping University Electronic Press on in August - October, 2001 and permanently available at
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2. First version *accepted* after due refereeing and according to scientific journal standards by the Electronic Transactions on Artificial Intelligence (ETAI) on 21.9.2001. Authors were invited to revise their articles, if they so desired, based on comments by the reviewers.
3. Revised version *accepted* on 4.12.2001.
4. Revised version *published* by Linköping University Electronic Press on 28.2.2002 and permanently available at the same URL as mentioned above.
5. Revised version appears in Electronic Transactions on Artificial Intellligence, Volume 5 (2001), section B, pages 189–202. The section and the annual volume are made permanently available at
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6. Paper editions of the ETAI issue and the ETAI volume containing this artice *republished* by the Royal Swedish Academy of Sciences.

The review policy and the quality requirements for acceptance are documented at http://www.etaij.org/info/

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