Electronic Transactions on Artificial Intelligence
Vol. 3 (1999), Section D: pp. *73-88*
http://www.ep.liu.se/ej/etai/1999/017/

Refereed Article

Johan Boye, Mats Wirén, Manny Rayner, Ian Lewin, David Carter, and Ralph Becket:

Language-Processing Strategies and Mixed-Initiative Dialogues

Author's affiliation: JB, MW: Telia Research, Stockholm, Sweden
MR, IL, DC, RB: SRI International, Cambridge, UK

Abstract: *We describe an implemented spoken-language dialogue system for a travel-planning domain, which accesses a commercially available travel-information web-server and supports a flexible mixed-initiative dialogue strategy. We argue, based on data from initial Wizard-of-Oz experiments, that mixed-initiative strategies are appropriate for many types of user, but require more sophisticated architectures for processing of language and dialogue than system-driven strategies; we then use these observations to motivate an architecture which combines parallel deep and shallow natural language analysis engines and an agenda-driven dialogue manager. We outline the top-level processing strategy used by the dialogue manager, and also a novel formalism, which we call Flat Utterance Description, that allows us to reduce the output of the deep and shallow language-processing engines to a common representation.*

Publication and review history

1. First version *published* by Linköping University Electronic Press on 30.12.1999 and permanently available at
   http://www.ep.liu.se/ea/cis/1999/024/
2. *Received* by the research area "Intelligent User Interfaces" of the Electronic Transactions on Artificial Intelligence, posted on its web site, and advertised in its Newsletter on 9.11.1999.
3. Publicly *discussed* in the ETAI area of Intelligent User Interfaces during February - May, 2000. The discussion protocol is available and will be retained in the Article Interaction Page at
   http://www.etaij.org/ra/iui/007/
4. First version *accepted* after due refereeing and according to scientific journal standards by the Electronic Transactions on Artificial Intelligence (ETAI) on 15.2.2003.
5. Revised version appears in Electronic Transactions on Artificial Intellligence, Volume 3 (1999), Issue 2, pages 73–88. The issue and the annual volume are made permanently available at
   http://www.ep.liu.se/ej/etai/1999/
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/

Article maintenance

The Electronic Transactions on Artificial Intelligence maintains an Article Interaction Page for this article at
http://www.etaij.org/ra/iui/007/
Besides the publication and review history, it contains links for contacting the author(s), as well as to amendments and other related information for the article. It is intended to keep these links up-to-date in the future.