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Refereed Article

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Predicate Construction in Higher-order Logic

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Abstract: *Predicate construction is a guided search process: a space of predicates must be enumerated in some systematic way in order to find, according to some criterion, a suitable predicate for some purpose. Often the search space is large and heuristics are used to guide the search. Typically, predicate construction is studied and implemented in the context of first-order logic. In this paper, I outline the foundations of predicate construction in higher-order logic. The main contribution is a method of incremental construction of predicates on higher-order terms that represent individuals. Applications of the approach to machine learning are indicated.*

Publication and review history

This work was first presented at the Machine Intelligence 17 Workshop, held on July 19-21, 2000 at Bury St Edmunds, Suffolk, 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 version *published* by Linköping University Electronic Press on 21.12.2000 and permanently available at
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3. Revised version *accepted* on 24.12.2001.
4. Revised version *published* by Linköping University Electronic Press on 31.3.2002 and permanently available at the same URL as mentioned above.
5. Revised version appears in Electronic Transactions on Artificial Intellligence, Volume 4 (2000), section B, pages 21–51. 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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