Electronic Transactions on Artificial Intelligence
Vol. 4 (2000), Section B: pp. *119-124*
http://www.ep.liu.se/ej/etai/2000/013/

Refereed Article

Marcel Turcotte, Stephen H. Muggleton, and Michael J. E. Sternberg:

Use of Inductive Logic Programming to Learn Principles of Protein Structure

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Abstract: *Inductive logic programming (ILP) has been applied to learn rules which characterize protein folds. Several representations for the background set have been explored and the results have been interpreted in their biological context. In this paper, we present new results obtained with a background set containing information about protein topology. The new rules are more descriptive than the previous ones,* i.e. *where previous rules represented local motifs, often associated with functional regions, the new rules represent more complete descriptions, often similar to the descriptions found in SCOP. Cross-validation experiments were conducted for the 20 most populated folds. The overall cross-validated accuracy was found to be 75.1 ± 1.6 % for the more limited background knowledge, and 82.1 ± 1.4 % with additional information.*

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
   http://www.ep.liu.se/ea/cis/2000/039/
2. First version *accepted* after due refereeing and according to scientific journal standards by the Electronic Transactions on Artificial Intelligence (ETAI) on 27.3.2001. Authors were invited to revise their articles, if they so desired, based on comments by the reviewers.
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 119–124. The section and the annual volume are made permanently available at
   http://www.ep.liu.se/ej/etai/
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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