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# Data Mining using Genetic Programming: Classification and Symbolic Regression

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# Stellingen (Propositions)

by Jeroen Eggermont, author of

*Data Mining using Genetic Programming*  
*Classification and Symbolic Regression*

1. Restricting the search space of a tree-based Genetic Programming algorithm for data classification can significantly boost classification performance [this thesis].
2. Fuzzification can improve the classification performance of an otherwise bad classifier [this thesis].
3. Detecting and pruning GP introns improves both the understandability of the evolved decision trees and the effectiveness of a fitness cache [this thesis].
4. When updating the weights in the Stepwise Adaptation of Weights algorithm rather than using a fixed constant to update the weights, the distance between the desired and actual result should be taken into consideration [this thesis].
5. When reporting results from empirical experiments one should always report enough information (e.g., mean and standard deviation) so that the results can be compared to results of others using statistical tests.
6. In dynamic environments extending an evolutionary algorithm with a case-memory can significantly improve its performance. [Raising the Dead; Extending Evolutionary Algorithms with a Case-based Memory. J. Eggermont, T. Lenaerts, S. Poyhonen and A. Termier. Proceedings of the Fourth European Conference on Genetic Programming (EuroGP'01), LNCS 2038, 2001]
7. In dynamic environments a case-memory combined with a meta-learner can be a valuable extension to an evolutionary algorithm. [Dynamic Optimization using Evolutionary Algorithms with a Case-based Memory. J. Eggermont and T. Lenaerts. Proceedings of the 14th Belgium Netherlands Artificial Intelligence Conference (BNAIC'02), 2002]
8. Writing a thesis is like optimizing a variable length (1+1) evolutionary algorithm with a dynamic, and a multi-objective, fitness function.