Invited Talk: Hyperparameter sensitivity revisited

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Abstract

The BDeu scoring criterion for learning Bayesian network structures is known to be very sensitive to the equivalent sample size hyper-parameter. Recently some authors have suggested alternative Bayesian scoring criteria that appear to behave better than BDeu. So is the problem solved? We will review the problem and suggested solutions and present empirical assessment of the current situation.

Biography

Tomi Silander is a senior research scientist at the NAVER LABS Europe (NLE) in Grenoble, France. Author of B-course, the first Bayesian network learning tool online, he made his PhD at the Helsinki University. He is known for developing exact structure learning methods with which he has studied the problems in the BDeu model selection criterion. He has also worked on developing alternative, information theoretic model selection criteria for structure learning such as the factorized normalized maximum likelihood criterion (fNML) and the quotient normalized maximum likelihood criterion (qNML). Having worked both in academic (University of Helsinki and the National University of Singapore) and industrial (Nokia Research Centre, A-Star Institute of High Performance Computing, and Xerox Research Centre Europe) research organizations, he is active reviewer for many machine learning conferences and journals.