



Some properties of probability inversion algorithms to elicit expert opinion.

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Probability inversion methods have been developed to infer underlying expert utility functions from rankings that experts offer of subsets of scenarios. The method assumes that the expert ranking reflects an underlying utility, which can be modelled as a function of predictive covariates. This is potentially useful as a method for the extraction of expert opinions for prediction in new scenarios. Two particular algorithms are considered here, the IPF algorithm and the PURE algorithm. The former always converges for consistent sets of rankings and finds a solution which minimizes the mutual information of the estimated utilities and an initial random sample of proposed utilities drawn in the algorithm.

In this poster I report some empirical studies on the probability inversion procedure, investigating the effects of the size of the expert panel, the consistency and quality of the expert panel and the validity of the predictive covariates. These results have practical implications for the design of elicitation by probability inversion methods.