Relevance Maps Part 2: The Inapproximability of Relevance Maps

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As the continuation of last week's talk Relevance Maps Part 1, we turn to a little more applied topics and questions concerning relevance maps such as: Can we actually compute the relevant input parameters of a classification function? As the complexity results from last week indicated, in general, it is $\mathbf{NP}^{\mathbf{PP}}$-hard to compute them exactly.
But is it maybe possible to approximate them efficiently with a reasonable error rate? In this occasion we will learn about the concept of an approximation algorithms. After reviewing the famous MaxClique problem and its (in)approximability and providing some reductions, we will finally prove that neither the relevant input parameters nor their complement can be well approximated.