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The Role of a priori Distributions for Sparse Parametrization of Models

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In the modern world of lots of data, there is a large number of powerful and effective tools for estimating the parameters of models, on the basis of which it is then possible to predict new values. To save valuable computational time, various types of regularizations can be added to the models to force sparse parameterization. Thanks to such parameterization, it can be aimed at better explanability and less complexity of the model. This contribution deals with the introduction of the concept of sparse parameterizations and their corresponding a priori distributions, such as Automatic Relevance Determination. It will be shown how it is possible to remove excess parameters from the model and still keep the main information in the data. In other words, we want as many parameters as possible to be zero, provided that they are insignificant to the model.

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