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*Bayesian learning: semiparametric modelling and asymptotic theory*

Bayesian learning, for our purposes, is about finding the probability distribution that a stochastic mechanism is following. For instance, it is of interest in bioinformatics to learn the distributions of protein torsional angles to better predict new protein structures. The bayesian solution is to characterize the space of possible distributions and to assign subsets prior probabilities, quantifying uncertainty about what the true distribution may be. Observations are incorporated in the model through Bayes' theorem.

Exploiting a correspondence between a class of bayesian statistical models and linear approximation operators, we demonstrate a general result on the asymptotic correctness of bayesian learning. The practical use of our approach is shown for the problem of learning the distribution of angular data: new angular data models, satisfying smoothness and geometric constraints, are constructed and studied using the approximation-theoretic framework.