Project Proposal

Team members: Jiaming Hu, Hanyuan Zhang, Yirong Bian

In our project, multiple models comparison on existing dataset will be our topic.

Firstly, we intend to use Gaussian process regression to predict a set of heart rate time series data from the MIT-BIH dataset (1000 observations as the training set and 500 observations as the test set).

Moreover, we are going to try to predict the heart rate using three sparse Gaussian process methods: SKI/KISS GP, Scalable Kernel Learning by Stochastic Lanczos Expansions, Constant time predictive distributions on the same dataset and the results of the three methods will be compared with each other. The time cost and accuracy of the different methods will be the main measure by which we evaluate these methods.

We will work together on the basic Gaussian process regression part and each be responsible for one implementation of the sparse Gaussian process method. All team members contribute equally.