**ABSTRACT**

A Bayesian network is a representation of a joint probability distribution of a set of random variables with a possible mutual causal relationship. The network consists of nodes representing the random variables, edges between pairs of nodes representing the causal relationship of these nodes, and a conditional probability distribution in each of the nodes. The Naive Bayesian classifier is based on Bayes' theorem with independence assumptions between predictors. A Naive Bayesian model is easy to build, with no complicated iterative parameter estimation which makes it particularly useful for very large datasets.

Our project is based on a Naïve Bayes. In our project, we have one interface for the Client. We have constructed a data-set with the help of a survey which has all features that we have posted as questions on our website as tuples such as occasion, budget, climate etc. The data set has four more tuples, in which the people taking the survey have told their favourite clothing (top: shirt, top, blouse; top colour; bottom: pant, jeans, shorts; bottom colour). Using this dataset, we have found out the conditional probabilities of the favourite clothing considering the features.

Then, when a user will visit the website and fill the form containing the same features as questions (except Top, Top Colour, Bottom, Bottom Colour), it is passed to the Naïve Bayes Network. The Network will then compute an output (top, top colour, bottom and bottom colour) using the responses of the user and already recorded/computed conditional probabilities.

Using such architecture or this technique for clothing recommendation is efficient as it recommends clothing to a user based on his/her own surroundings and conditions and other people’s likeliness with almost the same responses as that user. This helps the user to choose a clothing that is in trend right now and also what is best suited for people with the same responses as given by the user.

We have also implemented Decision Tree for our project. But we found out that Naïve Bayes is much more efficient than Decision Tree.