Flipr Hackathon Hiring Submission

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**Q1 Which model have you used for probability prediction? Explain your model.**

A Random Forest is an ensemble technique capable of performing both regression and classification tasks with the use of multiple decision trees and a technique called Bootstrap Aggregation, commonly known as bagging. What is bagging you may ask? Bagging, in the Random Forest method, involves training each decision tree on a different data sample where sampling is done with replacement.

**Gradient boosted model gives best accuracy**

**Q2 .Which model have you used for Diuresis Time series prediction? Explain your model.**

**Model used LSTM for time series prediction:**

I have used LSTM(Long Short Term Memory) which is RNN(Recurrent Neural Network with memory cell) for time series predictions. Time series prediction problems are a difficult type of predictive modeling problem. Unlike regression technique, time series also adds the complexity of a sequence dependence among the input variables. A powerful type of neural network designed to handle sequence dependence is called [recurrent neural networks](http://machinelearningmastery.com/crash-course-recurrent-neural-networks-deep-learning/). The Long Short-Term Memory network or LSTM network is a type of recurrent neural network used in deep learning because very large architectures can be successfully trained. The Long Short-Term Memory network, or LSTM network, is a recurrent neural network that is trained using Back-propagation Through Time and overcomes the vanishing gradient problem. LSTM networks can be stacked in Keras in the same way that other layer types can be stacked. One addition to the configuration that is required is that an LSTM layer prior to each subsequent LSTM layer must return the sequence. This can be done by setting the return\_sequences parameter on the layer to True.

The Long Short Term Memory neural network is a type of a Recurrent Neural Network (RNN). RNNs use previous time events to inform the later ones. For example, to classify what kind of event is happening in a movie, the model needs to use information about previous events. RNNs work well if the problem requires only recent information to perform the present task. If the problem requires long term dependencies, RNN would struggle to model it. The LSTM was designed to learn long term dependencies. It remembers the information for long periods.