# Machine Learning Algorithm for Delivery time prediction

We will make restApi using Flask and will deploy it over AWS. You can take account on AWS for testing and development.

## Sample Training Data for first time:

Client will provide data of 2 weeks for initial development of algorithm. We will use Neural Networks, SVM, Naïve bayes for regression model. We will choose the model with best performance and will deploy it.

Sample json format for training is given below but final format will be decided after mutual consent.

{“OrderID”:34534, ”TimeTakenInDelivery”:25,“Biker Name”: “Hamid”, “Area”: “Azizia”, “OrdersRemaining”:10, “Date”:”22 August 2018”, “TimeSpan”: 13},{“Biker Name”: “Qasim”, “Area”: “Batha”, “OrdersRemaining”:11, “Date”:”22 August 2018”, “TimeSpan”: 15}

Here we can divide 24 hours in different timespans:

|  |  |
| --- | --- |
| TimeSpanID | Time |
| 1 | 00:00-00:59 |
| 2 | 01:00-01:58 |
| …… | …. |
| 24 | 23:00-23:59 |

We can also add other factors like raining etc if these factors are contributing to delivery time.

We will give this training data to our algorithm and it will tune itself. We will need at least 2 weeks (60samples\*14) data to initially train our system.

Now after every month client will give data which will be used for retraining and performance will be improved with each passing month.

## Sample Data for retraining:

{“OrderID”:34534,”TimeTakenInDelivery”:25, ,”**PredictedTime**”:15 “Biker Name”: “Hamid”, “Area”: “Azizia”, “OrdersRemaining”:10, “Date”:”22 August 2018”, “TimeSpan”: 13}

## Retraining API (Client side)

This api will be deployed on client side where we will have database. It will be developed using “POST” method. It will be client responsibility to make this api.

## Sample format for requesting retraining data:

Call to “Retraining API” will be made from Machine learning side using this format:

{“Year”:2018, “month”:July}

## Sample reply from Retraining API:

{“OrderID”:34534,”TimeTakenInDelivery”:25, ,”PredictedTime”:15 “Biker Name”: “Hamid”, “Area”: “Azizia”, “OrdersRemaining”:10, “Date”:”22 August 2018”, “TimeSpan”: 13,”responseMessage”: “Success”}

## Cron Job on Machine Learning side:

Cron job will be created on machine learning server side which will send request after every month. It will get data from “API for retraining”

## API for giving predicted time (Machine Learning Side)

This api will be on machine learning server side. Client side will send request and this api will give predicted time in response.

## Sample Input:

{“OrderID”:34534,“Biker Name”: “Hamid”, “Area”: “Azizia”, “OrdersRemaining”:10, “Date”:”22 August 2018”, “TimeSpan”: 13}

## Sample Output:

{“PredictedTime”:50}

We will teach client how to deploy machine learning apis on Linux Server. APIs will be tested on postman.

# Budget:

Budget for this work will be 1000 usd.

# Time:

This process will take 3 weeks after getting data from client side.