Data Science Assignment

Context

Your customer manages a fleet of machines transmitting daily aggregated telemetry data. He engaged with you to better understand machine event rates to improve his machine maintenance and provisioning.

The customer provides you with a sample dataset with machine events statistics and tasks you to analyse the data and train a machine learning model.

Input

The dataset is partitioned by day and contains the machine serial number, a boolean that indicates if the machine had event (1=event) that specific day or not (=0) and 7 features that characterize the machine.

```
"date","machine","event","feature1","feature2","feature3","feature4","fea
ture5","fe
ature6","feature7","feature8","feature9"
2015-01-01,"S1F01085",0,7,407438,215630672,6,0,52,56,0
2015-01-01,"S1F0166B",3,0,403174,61370680,6,0,0,0,0
...
```

Task

You are tasked with building a model using machine learning to predict the probability of a machine event. When building this model, be sure to minimize false positives and false negatives. The column you are trying to predict is called an event with binary value 0 for non-event and 1 for event. We do not expect you to spend more than 2-3 hours on this but please be descriptive in what you would have done if time allowed.

Output

The customer is under time pressure and expects a maximum 2-3 pages document which a description of your approach on how you would build a predictive maintenance model to forecast machine events. Please also attach your code.

Summary of Requirements:

- The dataset is attached in the CSV file. (machine_events.csv)
- Use a framework and programming language of your choice to implement the task
- Submit your code and machine learning model.
- We expect to see code which you would be happy to put in production.
- Prepare a short and concise document (max 2-3 pages) describing your approach as you would to a real customer.
- Please be prepared to discuss your experience and answer questions about your document and your approach to complete the assignment.