

To,
IITD-AIA Foundation of Smart Manufacturing

Subject: **Weekly Progress Report for Week 8**

Dear Sir,

Following is the weekly progress report dating from 24th July to 30th of July, 2023. I went ahead and researched on shearing machine and practiced on Datasets for a clearer understanding of the things.

My Understanding of the Project: INTP23-ML-5: Equipment Failure Prediction for Predictive Maintenance

Predictive Maintenance is the procedure of using already existing data of various factors which might cause equipment failure and using those data available to us to predict when an equipment might fail in the future. It basically works on the principle of Condition Monitoring. Condition-monitoring tools combined with artificial intelligence and machine learning techniques forecast expected machine failure.

Predictive maintenance helps in:

- reducing maintenance costs
- maintenance scheduling and planning
- improving reliability.

With the help of such technologies, we can predict and perform maintenance activities without disrupting normal machine activities.

Weekly Progress:

24th July 2023:

Finished on Stanford Machine Learning videos from YouTube

- I used numpy and pandas for the basic part of the program.
- I also used matplotlib for the visualization part of the program.
- I imported sklearn modules for the different models of the code.
- I used Decision Tree, Linear regression, Lasso and R2 Model for the code.

25th July 2023:

Read articles on Machine Learning from Medium.

- I went through the old codes and found out errors which I had made.
- I found out my silly mistakes and some data filtering issues which I have made some errors in.
- I preprocessed the database again which sorted out some of the errors.

26th July 2023:

N/A

27th July 2023:

Practiced on Marathon Runner Dataset from Kaggle.

- I went through arrays since it is a crucial component of machine learning.
- I also went ahead and practiced on matplotlib to fine tune the coding practice.

28th July 2023:

Read articles on Machine Learning.

- I went ahead and wrote the methodology and wrote about what all I have done during the course of the internship.
- I also went ahead and got started on the report for the internship.

29th July 2023:

N/A

30th July 2023:

Practiced on Wind Speed Prediction Dataset.

- I went ahead and finished the ppt
- I also went ahead and finished the final report. It was a superb experience working with FSM Labs and I cant wait to take up more projects soon.

