To,
IITD-AIA Foundation of Smart Manufacturing

Subject: **Weekly Progress Report for Week 6**

Dear Sir,
Following is the weekly progress report dating from 10th July to 16th 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:

10th July 2023:
N/A (Was not able to submit my daily report on time due to prior important commitments)

11th July 2023:
N/A (Was not able to submit my daily report on time due to prior important commitments)

12th July 2023:
Read research articles on Machine Learning

- I read an article from TWI global
- I also went through a blog posted about it from coast app.

13th July 2023:
Practiced on Flight Prediction Dataset

- Ultilized numpy, pandas and sklearn
- I practiced on data preprocessing and data visualization.

14th June 2023:
Practiced on Industrial Dataset

- Ultilized numpy, pandas and sklearn
- I practiced on data preprocessing and data visualization.
- I tried to research on new data visualization tools.

15th July 2023:
Watched videos from Stanford machine learning playlist

- I watched gradient and linear regression video
- I also went through GDA and Native Bayes Algorithm
- I tried to research on new tools which could help with machine learning

16th July 2023:
Continued practicing from Standford machine learning playlist

- I watched kernel's video from the playlist
- I also went through decision trees.
- I went ahead and watched a few videos on neural networks.

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anomaly in an equipment is detected

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Why worry when you can Coast?

Get Started

Benefits of Predictive Maintenance

With the decision to use predictive maintenance for your business comes several benefits. A few of these might include:

- **Funds spent only on necessary inspections, repairs, or part replacement (no guesswork)**—predictive maintenance analyzes and suggests these steps just before any significant damage or equipment downtime occurs.
- **Fewer or no lost-time incidents due to surprise malfunctions and** reactive maintenance **repairs**—predictive maintenance keeps your business functioning like a well-oiled machine.
- **Maximized equipment lifespan due to necessary repairs and upkeep**—predictive maintenance helps prevent any real equipment damage from occurring, so you can have peace of mind about the functionality of your assets.
- **Increased revenue**—predictive maintenance, while it may be costly upfront, could end up saving your business major dollars down the line by protecting