

To,  
IITD-AIA Foundation of Smart Manufacturing

*Subject: **Weekly Progress Report***

Dear sir,

Following is the required progress report to the best of my knowledge considering relevant topics to be covered.

## **What happened last week:**

- PyTorch
- TensorFlow
- Shortlisting machine learning models.
- Flask and Django frameworks.
- Research on machine learning models.

## **What's happening this week:**

### **Weekly Progress:**

Following are the topics I've brushed upon and intend to learn deeper with upcoming days.

#### **June 05:**

- PyTorch:
  - Explored PyTorch, a popular deep learning library for building and training neural networks.
  - Gained insights into its applications in supervised and unsupervised learning.
  - Focused on constructing neural networks using PyTorch and investigated GPU acceleration for faster computations.

#### **June 13 and June 14:**

- TensorFlow:
  - Explored TensorFlow, an open-source machine learning framework developed by Google.
  - Gained a comprehensive understanding of its tools and libraries for model development and deployment.

**June 15:**

- Shortlisting machine learning models for predictive maintenance:
- Explored different machine learning models suitable for predictive maintenance tasks.
- Considered models such as linear regression, support vector machines (SVM), gradient boosting models, and neural networks.
- Conducted research to understand their applications and identified their strengths and weaknesses.

**June 16:**

- Flask and Django frameworks:
- Explored Flask and Django, two popular web development frameworks in Python.
- Examined their features, functionalities, and use cases.
- Compared Flask and Django to understand their suitability for different web development projects.

**June 17:**

- Introduction to advanced deep learning topics:
- Gained insights into advanced topics like recurrent neural networks (RNN), convolutional neural networks (CNN), long short-term memory (LSTM), and word encoding.
- Learned about their applications in natural language processing, image recognition, and sequence modeling.

**Weekly Progress:**

This week, I delved into PyTorch, TensorFlow, shortlisting machine learning models, Flask and Django frameworks, and advanced deep learning topics. I gained a deeper understanding of these concepts and explored their applications in various domains.

This week's learning was focused on expanding my knowledge in machine learning, deep learning, and web development. I am excited about the progress made and look forward to applying these learnings in upcoming tasks.