

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:**

- Auto hyperparameter tuning
- Continuation of Keras-tuner
- Further optimization of the CNN model.
- Dashboard

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

### **Weekly Progress:**

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

#### **July 24:**

- Learned about interactive components in Dash, enabling dynamic user interfaces with dropdowns, sliders, and input fields.
- Explored callback functions to update the web dashboard in real-time based on user input and trigger model predictions.
- Investigated deployment considerations, including cloud hosting and resource management.
- Implemented dashboard refinement, enhancing the user interface and optimizing layout for improved user experience.

**July 25:**

- Explored Dash Plotly framework for web dashboard creation with Python.
- Investigated dashboard components and layout options.
- Integrated trained CNN model for real-time predictions.

**July 26:**

- Project conclusion: Reviewing overall progress, identifying success areas and challenges, extracting key insights.
- Project Report Creation: Compiling relevant information, structuring report, including visualizations.

**July 27:**

- Finalized web dashboard by conducting meticulous testing and documentation for optimal functionality.
- Project is in its final stage with web dashboard and project report undergoing quality assurance and presentation preparation.
- No issues faced during the day.
- No specific highlights mentioned in the entry.
- Focus on ensuring accuracy and completeness of the web dashboard and project report for concluding the project. Excitement to share project outcomes and showcase accomplishments during the presentation.

**July 28:**

- Building upon the insights gained from the performance evaluation and error analysis of the CNN model, today's focus was on making targeted improvements to enhance the model's accuracy and predictive capabilities.
- Model Refinement:
  - Explored techniques for refining machine learning models to improve their performance.
  - Investigated methods for adjusting hyperparameters, tweaking model architecture, and incorporating additional features.
  - Explored transfer learning, which involves leveraging pre-trained models to boost performance on similar tasks.

**July 29:**

- Documented key takeaways and insights from the project experience.
- The project is in its final stage, with the web dashboard and report undergoing quality checks.
- No significant issues faced during the day.
- No specific highlights mentioned.
- The focus on preparing for the presentation and reflecting on the internship journey was enlightening.
- Excited about delivering the presentation and expressing gratitude to mentors and team members for their support.
- The project's conclusion marks a successful culmination of a challenging and rewarding experience.

**July 30:**

- Project conclusion, summarizing key takeaways and insights from the internship journey.
- Successful delivery of the final week report marks the completion of the project.
- No issues faced during the conclusion phase.
- No specific highlights mentioned in this entry.
- Reflection on the remarkable experience of learning, growth, and meaningful accomplishments.
- Development of a web dashboard with real-time predictive capabilities for manufacturing optimization.
- Gratitude for the support and guidance received from mentors and team members.
- Strengthening of technical and presentation skills during the internship.
- Looking forward to applying gained knowledge in future endeavors.

**Weekly Progress:**

This week's progress focused on learning and implementing various aspects of web dashboard creation using Dash Plotly, refining the CNN model for enhanced performance, and concluding the project. Key topics covered included interactive components, callback functions, deployment considerations, and model refinement. The project reached its final stage, with the web dashboard and report undergoing quality assurance. No major issues were faced, and the focus was on ensuring accuracy and completeness for the final presentation. The internship journey was described as a remarkable experience of learning and growth, with gratitude expressed to mentors and team members. The project's conclusion marks the successful development of a web dashboard for manufacturing optimization and a strengthening of technical and presentation skills for future endeavors.