

Solution Architecture

TEAM ID	PNT2022TMID35478
PROJECT TITLE	<i>Machine Learning-Based Predictive Analytics for Aircraft Engine</i>
DATE	16 October 2022

Solution Finding:

Machine learning techniques will be adopted for this project, and the we will follow a three-step methodology:

- 1. Pre-process the engine dataset and discover key parameters affecting engine health.*
- 2. Develop simple machine learning model to predict the RUL of engines and verify the prediction accuracy.*
- 3. Introduce other advanced algorithms to further improve the prediction performance, such as involving time series analysis.*

Machine Learning Models:

1. **Multiple Linear Regression :**

Multiple linear regression attempts to model the relationship between the sensor variables of our data and the Health Index by fitting a linear equation table observed data.

2. **K Nearest Neighbour Regressor :**

K Nearest neighbors is a simple algorithm that stores all available cases and classifies new cases based on a similarity measure.

3. **Artificial Neural Networks :**

An Artificial neural network is an attempt to simulate the network of neurons that make up a human brain so that the computer will be able to learn things and make decisions in a human-like manner. ANNs are created by programming regular computers to behave as though they are interconnected brain cells.

Architecture:

