

# Solution Architecture

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<b>TEAM ID</b>	<b>PNT2022TMID03696</b>
<b>PROJECT TITLE</b>	<b>Machine Learning-Based Predictive Analytics for Aircraft Engine</b>
<b>DATE</b>	<b>16 October 2022</b>

## *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:*

