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Assignment 2 - Data Visualization and Regression Models

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1 Understanding the problem

The following chapter discusses and answers a few questions regarding the problem and the dataset, to better understand the following chapters.

1.1 What type of problem is it?

The problem at hand is in fact a regression task. The dataset available contains monitored sensory data, with noise, and can be considered labeled. The goal is to develop a model that can predict/extrapolate the RUL (Remaining Useful Life) of turbofan jet engines.

1.2 What category of machine learning is required?

As the dataset can be considered labeled, i.e. the columns in the dataset are labeled and have some physical meaning, the supervised learning category will be used.

1.3 What does each column in the dataset represent?

Table 1.1: Column descriptions

| | |
|--------|---|
| Engine | Identification number, |
| Cycle | percentage of rotation or counted units since initialization. |

wtfff

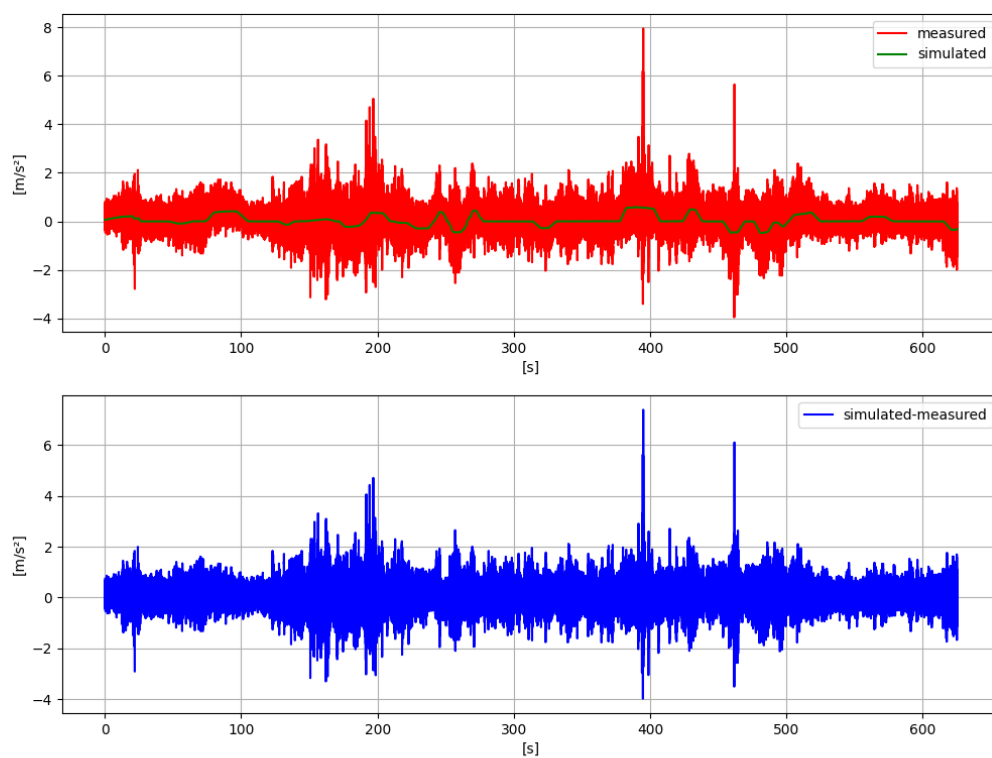


Figure 1.1: A plot of the data given in the assignment. The first plot shows both the measured and the simulated acceleration data. And the second shows the difference between the two.

2 Data Visualization

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3 Preprocessing and feature selection

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4 Regression models

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5 Regression models with extended features

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Appendix A

Source code

The source code, Jupyter notebook, used to load, transform and plot data.