



Thesis project available

Prognostics and Health Management (PHM)

(duration: 8-11 months)

❖ **Title of the research:**

Deep Learning Methods for Extracting Information from Text Documents in Prognostics and Health Management Applications

❖ **Context of the research**

Deep Learning attempts to model high-level abstractions by using multiple processing layers with complex structures. In recent years, deep artificial neural networks have been applied with success to data mining problems in different industrial fields. The objective of this thesis work is to develop deep learning algorithms such as Convolutional Neural Networks (CNN), Deep Auto-Encoder (DAE) and Long-Short Term Memory Recurrent Neural Networks (LSTM-RNN) for the automated analysis and classification of the information contained in text documents, such as visual inspection and maintenance reports.

❖ **Objective of the research**

Methodology investigation, development and pilot case examination, with software implementation of the method explored. Application to real industrial cases.

❖ **Industrial Impact**

The methodology and techniques of data analytics developed push forward the growth of the “industrial internet”, “internet of things”, “industry 4.0” paradigms, as they enable the intelligent exploitation of (big)data for failure anticipation and intelligent exploitation of optimization, and thus improvement of reliability and business continuity. Some industrial sectors (and partners) primarily and directly involved are:

- Aeronautic and Aerospace
- Energy
- Nuclear
- Oil and Gas
- Railway

For further information, please contact:

prof. Piero Baraldi piero.baraldi@polimi.it
prof. Enrico Zio, enrico.zio@polimi.it