

DiagFit addresses failure prediction of industrial equipment in a two steps process

STEP 1: Automatic Generation of Features or State of Health Indicators



This is an algorithmic innovation - a scientific invention - that transforms a time series into a set of discrete, rich and discriminant features quick to calculate. Specificity of this transformation resides in the fact that it preserves information contained in the time series and reveals transitory phenomenon that express the equipment state of health.

STEP 2: Industrial Predictive Failure Algorithms

This step consists in injecting the above generated features into Machine Learning algorithms to learn the normal behaviour for a healthy state and predict failure by examining the deviation from this healthy space, also called normality space.



DiagFit uses a set of Machine Learning-based algorithms specifically designed to answer the following industrial problems: Detection of defects and failure prediction, detection of near end-of-life of an equipment, estimation of the Remaining useful life of an equipment. During this step, various defects are categorized according to their unique signature derived from DiagFit's State of Health indicators (features). The model performance is measured before integrating it in a operational mode.

Automated Features Generation



QUICK MODEL DESIGN
LESS EXPERTS INTERVENTION

DiagFit Automated Features Generation

- Infinitely rich (thousands)
- Highly discriminant
- Easy to calculate (1000 features in less than 0.1ms)
- Automatically generated (less intervention from experts)
- Agnostic to equipment physical model
- Agnostic to physical signals

High Performance Predictive Models



HIGHER PRECISION
REDUCED FALSE ALERTS RATE

Diagfit Predictive Modeling

- Fault detection
- Failure prediction
- Ageing prediction
- End-of-Life prediction

Quick adaptation to equipment specificities
based on calculated features

Supervised and **Un-Supervised** learning