EDUARDO CALIXTO
CONSULTING

Artificial Intelligence for Maintenance 4.0

Online Training

SECURE YOUR PARTICIPATION!

Website: http:/www.eduardocalixto.com
Email: ec@eduardocalixto.com

Why Shoud attend this training ?

• To understand the current status of Maintenance Engineering concepts, knowledge, methofologies and Management based on CMMS.

• To understand the concept of Prognostic Health Management that aims to predict the Remaining Useful Life (RUL) and State of Health (SoH) of equipment that operates over their design stress limits.

• To understand the Unsupervised Manchine Learning Methods (USML) such as Principal Component Analysis, Multidimentional Scaling Analysis, K-Means, Gaussian Mixture, Hierarchical Cluster, Neural Network Self-Organized Map and their application to cluster equipment data and optimize maintenance schedules.

• To understand the Supervise Machine Learning Classification SMLC) methods such as K–Nearest Neighbor, Decision Tree, Naive Bayes, Neural Network Classification, Linear Discriminant Analysis, Suport Vector Machine and Logistic Regression Classification. In addition, the application of such methods to classify risk, criticality and rank different level of equipment degradation to alarms of RUL.

• To understand the Supervised Manchine Learning Regression methods such as Linear Regression, Ridge and Lasso Regression, Stepwise Regression, Decision Tree Regression, Support Vector Machine Regression, Gaussian Regression and Neural Network Regression. In addtion, several examples of RUL prediction will be demostrated using the software MATLAB.

• To understand the concept of Esemble methods such as Boosting, Bagging, Stack and Randon forest with an example of application.

• To understand the concept of Convolutional Neural Network with an example of image classification aplied to RUL using the degradation images.

• To understand the concept of Asset Management Intelligence based on the Asset Management 4.0 solution .

Who Shoud attend this training ?

Asst management Managers, Asset Integrity Managers, Maintenance Managers, Reliability Managers, Reliability Engineers, , Maintenance Engineers, Process Engineers, Safety Engineers, Production Engineers.

Trainer : Dr Eduardo Calixto, CRP, CFSE.,

He's Reliability and Safety Engineer Expert with over 18years experiences in Oil & Gas, Railway, Aerospace and Mining Industries. He has Doctoral Degree in Energy and Environmental, Master in safety System Management, Bachelor in Industrial Engineering. Author of the best seller Book Gas and Oil Reliability Engineering: Modeling and Analysis (material content of this training).

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Day 1 - Training Outline:

- Module 1: Introduction
- Module 2: Maintenance Concepts
- Module 3: Prognostic Health Management
- Module 4: Artificial Intelligence Introduction
- Module 5: USML - Principal Component Analysis
- Module 6: USML - Multidimensional Scaling
- Module 7: USML - K-Means
- Module 8: USML - Gaussian Mixture
- Module 9: USML - Hierarchical Cluster
- Module 10: USML - NN Self-Organized Map
- Module 11: SMLC - Neural Network Classification
- Module 12: SMLC - K-Nearest Neighbor
- Module 13: SMLC - Decision Tree
- Module 14: SMLC - Naive Bayes

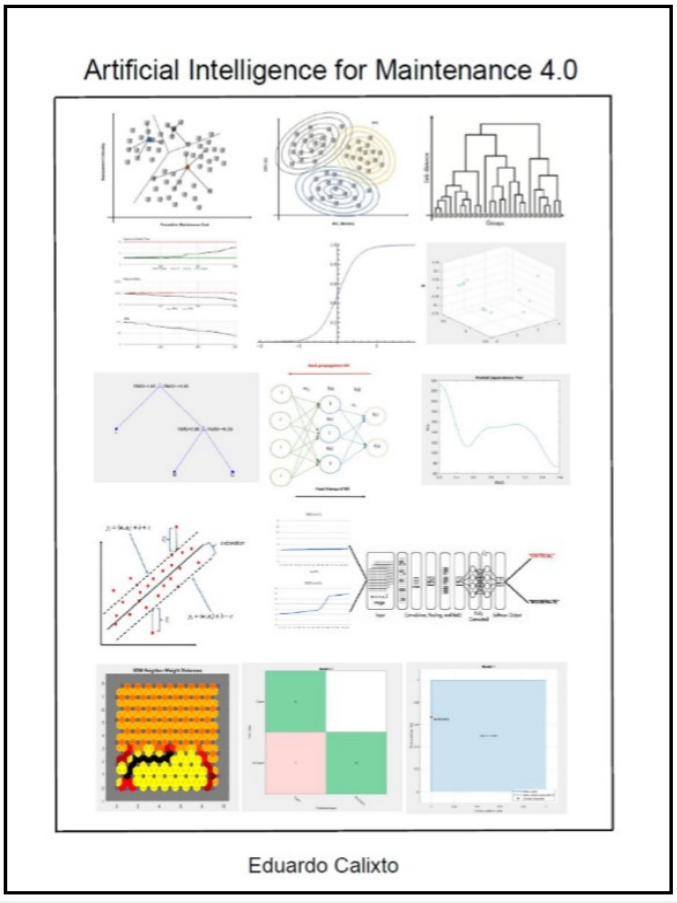
Day 2 -Training Outline:

- Module 15: SMLC - Linear Discriminant Analysis
- Module 16: SMLC - Support Vector Machine
- Module 17: SMLC - Logistic Regression Classification
- Module 18: SMLT - Linear (Ridge & Lasso) Regression
- Module 19: SMLR - Stepwise Regression
- Module 20: SMLR - Decision Tree Regression
- Module 21: SMLC - Support Vector Machine Regression
- Module 22 SMLC - Gaussian Regression
- Module 23 SMLC - Neural Network Regression
- Module 24 SMLC - Ensemble Methods
- Module 25 SMLC - Convolutional Neural Network
- Module 26 SMLC - Asset Management 4.0

What´s the training benefits ?

You do not need to know any algorith language and have a deep mathematic knowledge. Everything will be explained step by step with examples. After this training you will be able to haave a deep understanding about the different Artificial Intelligence methods expalined during the training to optmize your maintenance schedule, classify maintenance database in categories and predict the RUL, Soh and other parameters based on regression methods by using the MATLAB software.

Book Training Content:



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