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MALAYSIAN SMART FACTORY 4.0

GENERATIVE A.I. INNOVATION HUB
@SHRDC
by the Malaysian Smart Factory 4.0

Q1 2024 - MSF 4.0 TRAINING CALENDAR

DATA AUTOMATION & VISUALIZATION

DATA GENERATION (LEVEL 1)

- Connect sensors and IoT Gateway.
- Read data from the sensor module and set up a data visualization dashboard.
- Send data to a mobile App or Web browser to generate notifications and alerts.
- Effectively collate data from existing machines that are part of a manufacturing process.

Dates: 26 Feb – 1 Mar
18–22 Mar

MACHINE DATA LOGGING & VISUALISATION FOR SMART FACTORY (LEVEL 2&3)

- Master tools to log machine-generated data for monitoring and visualization.
- Log machine process and sensor data with time-stamp info into on-premise or cloud-based databases using Node-Red.
- Display real-time and historical data from databases using a time-series visualization platform.

Dates: 18–22 Mar
22–26 Apr

DATA FORMULATION: OVERALL EQUIPMENT EFFECTIVENESS (OEE) (LEVEL 4)

- Identify key parameters for OEE monitoring.
- Describe methods for calculating Availability, Performance, and Quality.
- Identify the six major losses in OEE.
- Construct a real-time process flow using a development tool to monitor and calculate OEE, integrating hardware and software for verification and validation.

Dates: 22–26 Apr
13–17 May

HRD CORP CLAIMABLE

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LEAN & AGILE

DIGITAL FACTORY ESSENTIALS (DFE) FOR LEAN – INDUSTRY 4.0

- Produce a basic robot simulation using the robotics simulation software.
- Set up and establish connection between the robot and PC / laptop.
- Program collaborative robotics movement using robotics simulation software and
- collaborative robotics programming software.

Dates: 26 Feb – 1 Mar

DIGITAL PROCESS OPTIMIZATION (DPO) FOR LEAN-INDUSTRY 4.0

- Utilize digital process optimization tools to visualize the manufacturing performance and improvement using lean manufacturing methodologies.
- Utilize lean manufacturing methodologies to improve the digital manufacturing process design for manufacturing process efficiency and productivity.

Dates: 4 – 8 Mar

ENHANCED DATA PROFICIENCY

MSF 4.0: DATA ANALYTICS ESSENTIAL

- Describe the fundamental steps in performing Data Analytics.
- Manipulate data to meet specific data analytics requirements.
- Develop a training model to analyze and evaluate the data.
- Demonstrate data reporting and visualization of the results through the data analytics platform.

Dates: 19 – 23 Feb

DEEP LEARNING ESSENTIALS FOR SMART FACTORY

- Analyze time-series data by performing data cleaning, data visualization to identify trends, seasonality, and anomalies from time-series datasets.
- Forecast by applying machine learning techniques like ARIMA to predict future values in time series data relevant to manufacturing processes

Dates: 26 Feb – 1 Mar

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ARTIFICIAL INTELLIGENCE

COMPUTER VISION DEEP WITH LEARNING FOR SMART FACTORY

- Utilize the relevant software platform to train and deploy deep learning model(s) for computer vision application(s).
- Utilize Node-RED to develop interactive user interfaces to control and monitor the computer vision task and application(s).
- Perform the necessary methodologies for Computer Vision projects using Deep Learning.

Dates: 19–23 Feb

GENERATIVE AI: PROMPT ENGINEERING ESSENTIALS FOR INDUSTRY 4.0

- Provide detailed definition of computer vision and describe the differences between image classification, object detection and image segmentation tasks.
- Perform the necessary methodologies for Computer Vision projects using Deep Learning.

Dates: 29 Jan – 2 Feb
26 Feb – 1 Mar

DIGITAL WORKFLOW MANAGEMENT & COBOT

DIGITAL WORKFLOW MANAGEMENT ESSENTIALS FOR SMART FACTORY

- Identify the key features of an Enterprise Resource Planning (ERP) system and the key advantages of an integrated resource planning implementation for a Smart Factory.
- Integrate Barcode Scanning and Identification System for enabling traceability in processes.

Dates: 29 Jan – 2 Feb
26 Feb – 1 Mar

COLLABORATIVE ROBOTICS ESSENTIALS FOR SMART FACTORY (COBOT)

- Utilize the basic features in robotics simulation software proficiently.
- Produce a basic robot simulation using the robotics simulation software.
- Set up and establish connection between the robot and PC/laptop.

Dates: 18–22 Mar

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