Fourth Industrial Summer School

Module 3 – Introduction

Session Objectives

- ✓ Module Objectives
- ✓ Module Topics
- ✓ Module Instructor
- ✓ Module Delivery

Module Objectives

- **Description**
  - Data analysis foundations covers a wide range of topics essential for data analysis such as: statistical concepts for predictive modelling, data plotting and visualization, exploratory data analysis, feature engineering and dimensionality reduction.

- **Objectives.** Participants should be able to:
  - Understand necessary statistical concepts for predictive modelling.
  - Plot and visualize data using different data visualization charts.
  - Understand exploratory data analysis and visualize distributions, relationships, and groups.
  - Ability to perform feature engineering and reducing dimensionality.
  - Understand time series data and perform feature extraction on them

Module Topics

- Predictive modeling
- Hypothesis testing
- Parametric and non-parametric tests
- Correlation
- Exploratory Data Analysis (EDA)
- Data plotting and visualization
- Estimating correlation and association
- Feature Engineering
- Feature Extraction with PCA
- Time series
- Feature extraction in time series

Module Instructor

- Hamoud Ibrahim Aljamaan, PhD
  - Graduated in Dec 2015.
  - University of Ottawa, Canada.

- Current work:
  - Assistant Professor, ICS dept.
  - Chairman, ICS dept

- Main research area:
  - Machine learning
  - Code smell detection
  - Software defects
  - Software maintainability
  - Time series analysis

Module Delivery

Morning session

1. Lecture
2. Hands-on problem solving

Afternoon session

1. Lecture
2. Hands-on problem solving

Module Delivery

- Lecture
  - Instructor will go over the topics.

- Hands-on problem solving
  - Instructor will go over Questions.
  - Participants starts solving problems.
  - Sharing solutions.
    - Instructor will pick a participant to share his solution (screen).

Let’s Get Started