AI/ML Workshop Series – Syllabus

Lecture Venue: M1-1-010, AUH Campus

Times: 12:30 – 13:30 PM (during the lunchbreaks)

Background: This workshop series is for absolute beginners and assumes no prior knowledge of Machine Learning (ML), Data Science (DS), or Artificial Intelligence (AI).

Audience: This course is for students registered at ZU for the Fall of 2025 and is opened to students and staff of all academic levels.

Course Goals: By the end of this course, students should have the requisite knowledge of landing their first internship as a Data Scientist or be able to work full-time as a Junior Data Scientist.

Course Website: https://github.com/MuhammadAlZafarKhan/AI-ML-Workshop-Series

Questions/Comments/Enquiries: Direct them to Muhammad.Khan@zu.ac.ae or visit my office in MF3-1-011.

Textbook and Online Material: None. We shall follow an unconventional approach that emphasizes solving real-world applications in industry.

Session 1 (22 October 2025): Basics of SQL – Writing simple queries.

Session 2 (23 October 2025): Intermediate-advanced level SQL queries.

Session 3 (29 October 2025): Basics of Python programming. Cleaning data.

Session 4 (30 October 2025): Linear and multilinear regression. Predicting house prices, crop yield optimization for precision farming.

Session 5 (5 November 2025): Logistic and multiparameter logistic regression. Credit scoring and loan prediction and customer churn prediction.

Session 6 (6 November 2025): Support Vector Machines. Machine fault prediction in maintenance engineering. Quality control on production lines.

Session 7 (12 November 2025): Decision Trees. Fraud detection and disease diagnoses.

Session 8 (13 November 2025): Random Forest and Naïve Bayes. Climate change risk assessment. Root cause analysis (RCA).