



Shiraz University
School of Electrical and Computer Engineering

Numerical computing

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Final project

Deadline:

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Max mark: 100

Introduction

Machine learning is a type of artificial intelligence that enables computers to learn from experience and improve their performance on a task without being explicitly programmed. By training algorithms on large datasets, machine learning can identify patterns and relationships in the data and use them to make predictions or decisions about new data. There are three main types of machine learning: supervised learning, unsupervised learning, and reinforcement learning. With applications in image recognition, natural language processing, predictive analytics, and more, machine learning has the potential to revolutionize many industries and improve our daily lives in countless ways.

Intro to ML: Linear regression

In machine learning, linear regression is a supervised learning algorithm used to predict a continuous output variable based on one or more input variables. The algorithm fits a linear equation to the training data, and then uses that equation to make predictions on new data. Linear regression is a simple but powerful technique that can be used for a wide range of prediction tasks, such as predicting sales, housing prices, or stock prices.

Project outlines

In this project your goal is to develop a linear regression approach over real-world datasets in order to predict related concepts.

You will be provided by three real-world datasets and you have to choose one of them to work on:

- [Life Expectancy \(WHO\)](#).
- [Body Measurements](#).
- [Real estate price](#).

How to work with datasets

In order to use this datasets effectively some guidelines must be followed:

- Read through the each dataset document so you can understand it more deeply.

- Create visualizations such as line charts or bar graphs that show relationships between two or more variables.
- Consider specific questions you wish to answer when working with the data and make sure your approach is targeting those questions.

You should provide

- Your code containing your linear regression model.
 - A complete document about our approach. Please note that your document should contains charts, graphs, logic behind your approach and paramter tuning and etc.
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- Upload your project in Quera .
- **Do not Cheat and Feel free to ask any question.**

Best wishes