Assistance Systems

Project 2 - Recommendation System

Prof. Dr.-Ing. Udo Garmann

Abstract

Requests for the second project (recommendation system)

Part 01 Project Setup with README file

Create a similar README file on MyGit as with the first project.

Change the project specific chapters like title, description, ...

Part 02 Requests

Create a PyQt6 application that implements the following requests:

- A Desktop App with PyQT6 has to be developed.
- A requirements.txt file must be used to list the used Python modules.
- A README.md file must be created with the structure described in part 01.
- The module `venv` must be used.
- A free data source must be used. You may find it for example at Kaggle, SciKit (but not the built-in ones), or other.
- There must be a data import (predefined format and content of CSV).
- The data must be read from a file after clicking on a (menu) button.
- The data must be analyzed with Pandas methods, so that a user gets on overview.
- You may use the functions `dataframe.info()`, `dataframe.describe()` and/or `dataframe.corr()` for that.
- You may also use other metrics or diagrams to do this.
- Create several input widgets (at least 3, where 2 must be different) that change some feature variables.
- A Scikit training model algorithm (e.g. from Aurélien Géron, Chapter 4) must be applied.
- Create 1 or 2 output canvas, i.e. for data visualization
- At least 3 statistical metrics over the input data must be shown
- The app must react interactively to the change of input parameter with a new prediction with visualization.

Grading

In general, the project about a recommendation system has the following parts:

- Graphical User Interface (GUI) with PyQt
- Visualization (with pandas and matplotlib)
- Data analysis with pandas and numpy
- scikit-learn

When the project is done by 2 students, they must divide their work like this:

Student 1:

1) Graphical User Interface
2) Pandas with Numpy

Other student:

3) Visualization
4) Scikit-Learn

Both: 7) General Python Programming.