Laboratory Work

Module A

The objective of module A of the thesis is to apply search algorithms and find a better path in an N×N maze.You are asked to implement various shortest paths finding algorithms and construct various cost functions both to measure actual distances and to estimate distances from a node to the target node (heuristic). You can also experiment with any of the parameters of each algorithm in order to study how these changes affect complexity, time and optimal path. The proposed algorithms as well as their variants will run in mazes of different sizes. The algorithms should be compared based on their complexity and whether they can find the optimal path. Finally, in the labyrinth there is a ghost 👻 ! The goal is to reach the finish line avoiding the ghost, which chases us running at every step its own A*!

- To implement Section A, use the AI_24_EX1.ipynb **template.**

Module B

The objective of module B of the paper is the construction of a Recommendation System for films. These suggestions will stem from both the characteristics of the film and certain ratings of each user. The data of the exercise includes a file with the name movies_metadata.csv which contains the characteristics of each film such as theme, director, actors, keywords, etc.a. from IMDB as well as ratings.csv files containing actual user reviews, divided into train and test set. After creating the world of the problem, you are then invited to create, in Prolog, simple rules that will find all the movies pi.X. With a common theme, common director Mr.t.min. and add queries withwhich better recommendations can be generated. In addition, you will have to construct scalable queries that will return similar (in features) or less similar movies. Finally, you are asked to perform a system upgrade in order to produce better recommendations that take into account the user's preferences.

- To implement Module B, use the AI_24_EX2.ipynb **template**

  ATTENTION: In the folder where you will save the AI_24_EX2.ipynb template, you must also save the following files: db.pl, movies_metadata.csv, PrologIntro.ipynb, test_ratings.csv, train_ratings.csv.