Semester Project Proposal

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Domain:
Tetris game (single player)

Additional constraints suggested by the professor: AI should be given the information what blocks might arrive in the future. (professor's feedback)

Search Algorithm:

Expectimax Algorithm (professor's recommendation)
A* search

We will try to implement both and check which one is the better one.

Neural Network:

Might use *feed-forward neural network*, although this will most probably change since we do not have any domain knowledge about neural networks. They will essentially help to improve the heuristic computation for the tree search algorithms by training the NN over training data.

Randomization:

For *Tetris* we will change the grid size by changing the number of rows and columns. We will also initially fill the grid with some random blocks, this will ensure randomness so the AI will take different paths for different scenarios.

Performance Evaluation:

We will use basic statistical functions to evaluate the models, like no of nodes visited, completion time, etc.

Technologies:

Primary language: Python,
Packages: NumPy, Matplotlib, Pandas, etc. (subject to change)