

Final Year Project Plan

Reinforcement Learning for Tetris

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Introduction

Reinforcement learning refers to goal-oriented algorithms, which learns how to maximize along a specific dimension over many steps; in this case, maximize the points won in a game of Tetris over many moves. Like how humans learn to achieve better score, through multiple interaction with the Tetris game environment, Reinforcement learning is just a computational approach of learning from action.

Objectives / Milestones

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| 1. Understand the theory behind Deep Reinforcement Learning and Convolutional Neural Network for Visual Recognition | From Aug 2018
To Sep 2018 |
| 2. Design and implement a Tetris game environment to simulate and visualize the actual gameplay | From Sep 2018
To Nov 2018 |
| 3. Learn how to implement Convolutional Neural Network for Visual Recognition to allow agent to recognize the environment | From Nov 2018
To Nov 2018 |
| 4. Design and implement an agent that can interact with the Tetris game environment | From Dec 2018
To Jan 2019 |
| 5. Reinforcement Learning techniques will be used to train the agent to learn how to behave in the environment | From Jan 2019
To Feb 2019 |
| 6. Agent is required to learn the optimal policy and select the optimal action to perform which maximizes the score of the Tetris game | From Jan 2019
To Feb 2019 |

Progress Tracking & Reporting to Supervisor

- Bi-weekly meetings will be held to discuss progress and clarify of any doubts faced
- A GitHub Repository will be used to organize the entire project and a GitHub Page (<https://jcodesh.github.io/>) will updated regularly to report intermediate results and stay on track of the project