

Final Report

Date: 21/07/2017

FrozenLake-v0

- Implemented Q-Table to solve the FrozenLake problem on openai gym. Apart from the standard 4*4 board, user can input its own board/ start and end positions/ holes etc. Also created a file for better display using pygame

Tic-Tac-Toe

- Used Q-Table to train a agent to play with itself for large number of games and decide for itself the best moves.

MountainCar

- Read up the codebase for a similar game CartPole and tried implementing in MountainCar. This one was challenging because reward was discrete as compared to CartPole where reward was given for every second it balances the pole.

Ultimate Tic Tac Toe

- This game is much complicated than simple Tic-Tac-Toe. For rules visit [here](#)
- Had to apply a heuristic based method because number of states was too large. Still doesn't perform very well

Universal Approximator

- Read up text about universal Approximators built using 1 Layer of neural network to predict the value of any function in a range. Given sufficient number of neurons it approximates the function using constants/linear functions. At the end it plots the approximate graph.

Breakout (In-Progress)

- The famous game of Atari Breakout, currently working on it.

Puzzles of Sakoban (In-Progress)

- I have created a terminal interface for this game which can be used as environment. But I still have to code the agent.