21. Playing Flappy Bird with Deep Neural Network

Github: https://github.com/neerajBarthwal/FlappyBirds-DQN.git

Team Members

- Neeraj Barthwal (2018201069)
- Suchismith Roy (2018201101)
- Ritik Agarwal (2018202017)
- Amit Tiwari (2018201099)

Goal

This project is an implementation of the research paper Deep Reinforcement Learning for Flappy Bird by Kevin Chen. The goal of the project is to learn a policy to have an agent successfully play the game Flappy Bird. This will be done by replicating the paper results through demonstrable code.

Problem Statement

Training an agent to successfully play the game is especially challenging because our goal is to provide the agent with only pixel information and the score. The agent is not provided with information regarding what the bird looks like, what the pipes look like, or where the bird and pipes are. Instead, it must learn these representations and interactions and be able to generalize due to the very large state space.

Results of the project

The initial result will a trained network capable of playing Flappy Birds as the research paper claims. The computer agent will be able to play extremely well and surpass human performance.

Tasks for each member

The initial task for each team member is to read the mentioned paper and understand it well. This includes a good understanding of the proposed algorithm and approach. This will be followed by suggestions on improvements on the current approach employed as a part of the solution.

Project milestones and expected timeline

The milestones of the project include completion of three deliverable in the following order:

DELIVERABLE-1: Project Presentation
DELIVERABLE-2: Github repo
DELIVERABLE-3: Final Project Report

TIMELINE:
Report and PPT submission: 30th April
Final presentation: 30th April