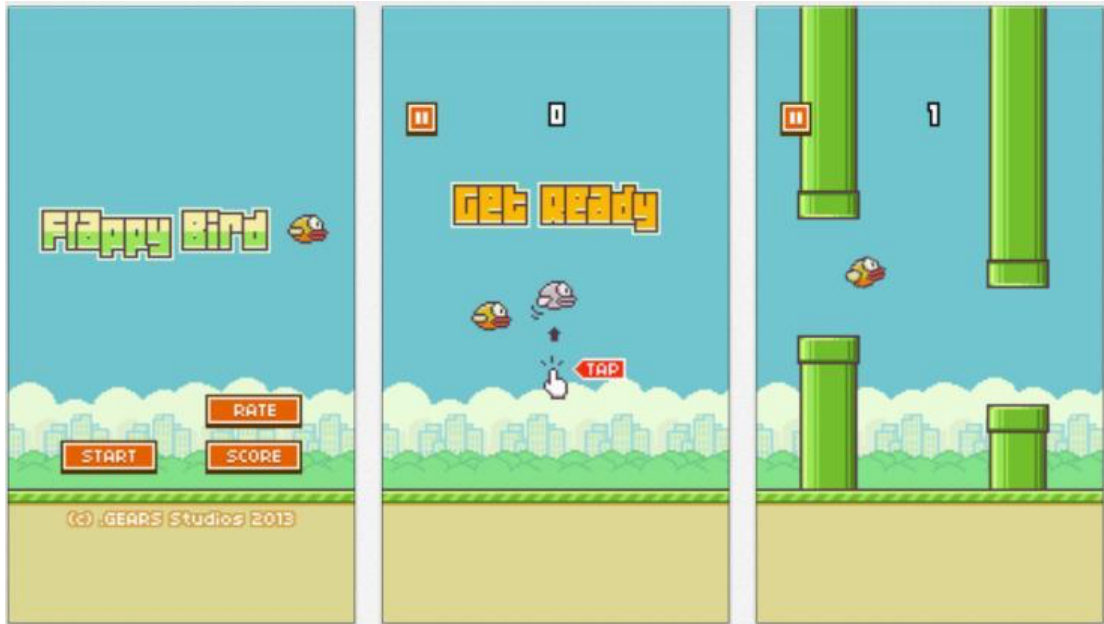


COMP47590
Advanced Machine Learning
Assignment 2: Come Fly With Me

Introduction

In this assignment we will train a simple agent to control the behaviour of the bird in the game Flappy Bird.



Tasks

To complete this assignment, download the template notebook and complete the tasks within it (highlighted as “#Add code here”).

Notes

The following notes may be useful:

- **Can I Use Scikit-Learn, PyTorch, Tensorflow, Stable-Baselines-3 And Other Python Packages?** Yes, and you absolutely should!
- **It's Taking Forever!** Reinforcement learning can take a long time. If you find things are taking too long feel free to train for shorter amounts of time (but ensure to reflect on this at the end). Submissions will not be penalised for this. Google Colab (<https://colab.research.google.com/>) might be a useful resource for accessing computation (you can also download saved models for local evaluation).
- **Can I Work In A Team?** Teams of up to **three** people are allowed. All team members will receive the same mark. There is no penalty for submitting as a team, and no reward for submitting as an individual.

Submission

The key submission details for the assignment are as follows:

- **Submission date:** Friday 5th May, 2023 before 23:59 (although please consider submitting early!)
- **Submission method:** Submissions should be made through the module Brightspace site.
- **Submission format:** Submissions should compose a zip file containing the following:
 - Completed Jupyter notebook including all code and output.
 - .html export of Jupyter notebook after execution that contains all output
 - any other files required to execute your code (e.g. saved model files)
- **Late submissions:** Late submissions will be penalised at 5% penalty per day.

Marking

Marking of tasks will be based on the following weighting.

- Create & Explore 5%
- Single State Agent 30%
- Image Stack Agent 40%
- Evaluation 10%
- Reflection 15%