

# AI PROJECT PROPOSAL

## GENETIC ALGORITHMS BASED AI TO PLAY FLAPPY BIRDS

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September 2, 2017

Due Date: 3 Sept'17

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### 1. Project Description

#### *Objective*

The objective of this project would be to use genetic algorithms to create an AI to efficiently play flappy birds. Evolutionary algorithms are heuristic search algorithms that use mechanisms that are based on evolution, genetic algorithms a subset of them, are highly helpful in optimisation problems.

Flappy birds is a popular game where a bird tries to fly through in between the pillars and the score is dependant on the number of pillars it is able to pass, which can appear at different heights at random . The player needs to use only one key to make it jump or not use the key to let the bird fall down. We need to use genetic algorithms to maximise the score and not let the bird die due to collision with a pillar.

### 2. Goals

1. Optimal path finding with the jumps required, using genetic algorithm.
2. The bird learns with every pillar it passes, through machine learning.
3. To score maximum and move among pillars.

### 3. Tasks

1. To identify the correct population structure, search space and fitness algorithm for using genetic algorithm in this situation. Cross over and mutation methods.
2. Machine learning application, choosing the right method to apply and learn from every inherited generation.
3. Implementation of the algorithms to simulate the behaviour of AI as a game on the computer.