Project proposal

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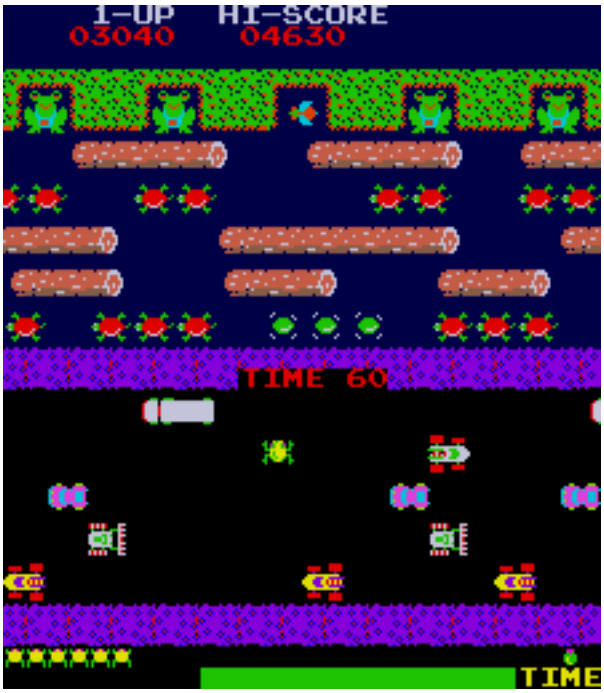
1 Subject

The objective of our project is to solve an old Japanese arcade game **Frogger**[1] developed in 1981 by Konami and manufactured by Sega.



The goal of the game is to guide a frog to each of the empty "frog homes" at the top of the screen. The game starts with three, five, or seven frogs, depending on the settings. Losing them all ends the game. The only way player can control the game is the 4-direction joystick used to navigate the frog; each push in a direction causes the frog to hop once in that direction.

2 Our approach

We are going to implement a genetic algorithm called NeuroEvolution of Augmenting Topologies (NEAT[2]), that uses both artificial neural networks to analyze environment-player interactions and evolution to find best structure of a network.

Our choice is based on the great performance of NEAT in games with not very different mechanics like Mario Bros or Flappy Birds. Besides, it is a really cool algorithm and we just want to explore its applications.

[1] https://en.wikipedia.org/wiki/Frogger
[2] https://en.wikipedia.org/wiki/Neuroevolution_of_augmenting_topologies