



Reinforcement learning

Solving Super Mario Bros first level

Neural network and Genetic algorithm aproach



Neural Network

- Controls Mario
- $5 \rightarrow 10 \rightarrow 4$ Shape



Neural Network

- Inputs :
- Time since last jump
- Distance to closest enemy
- Distance to closest obstacle
- Is touching ground
- Distance to closest gap



Genetic algorithm

- Inspired by evolution
- Survival of the fittest → fitness function
- Trains neural networks by updating the weights as “genes”

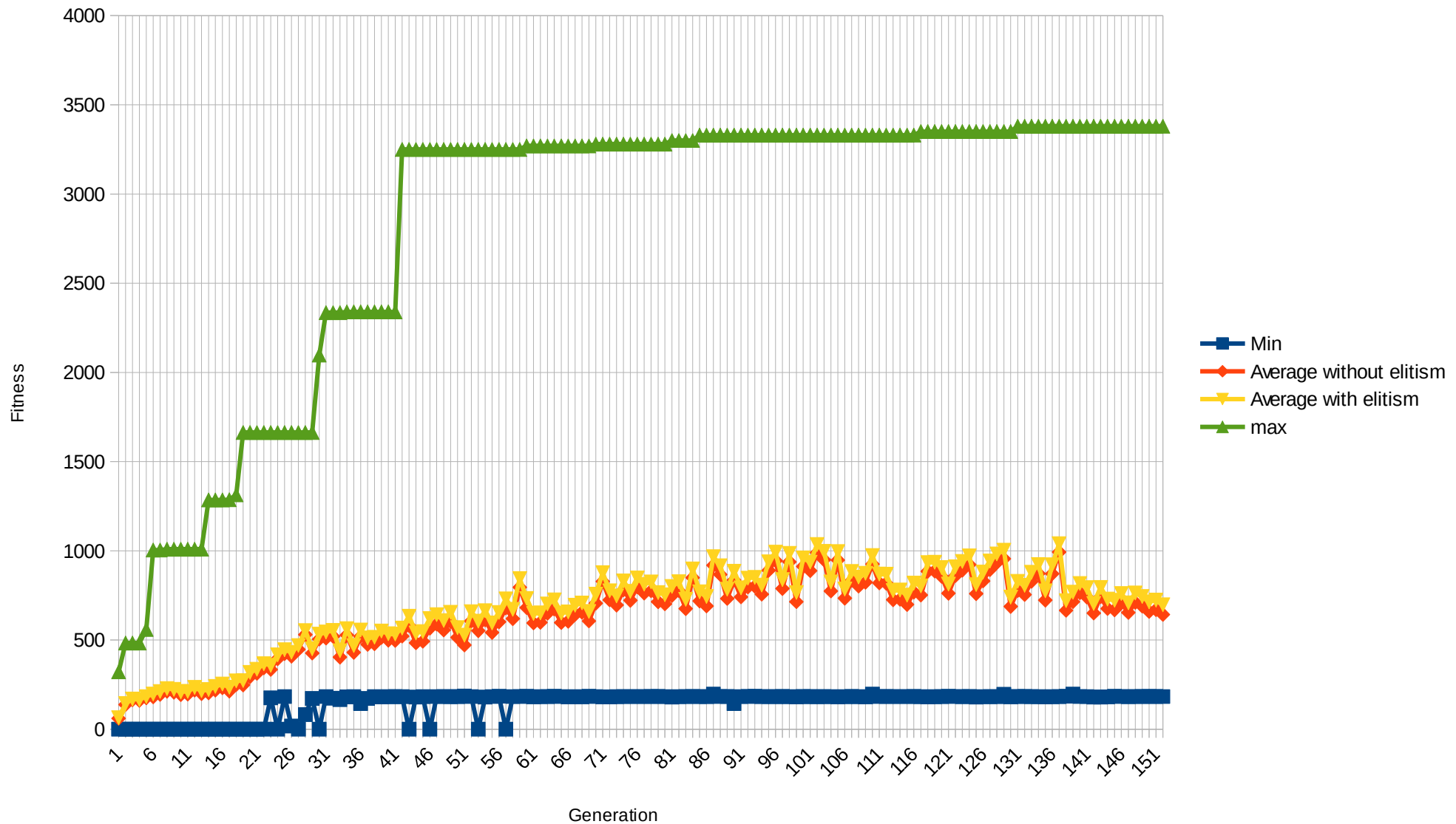


Genetic algorithm

- Parameters :
- Generation size = 100
- Mutation rate = 5%
- Elitism = 2

Results

Fitness in function of generation





Results

- Let's watch it !