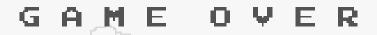
HI 00703 00703







## **Real Gaming Boy**

Deep Reinforcement Learning in Chrome Dino Game

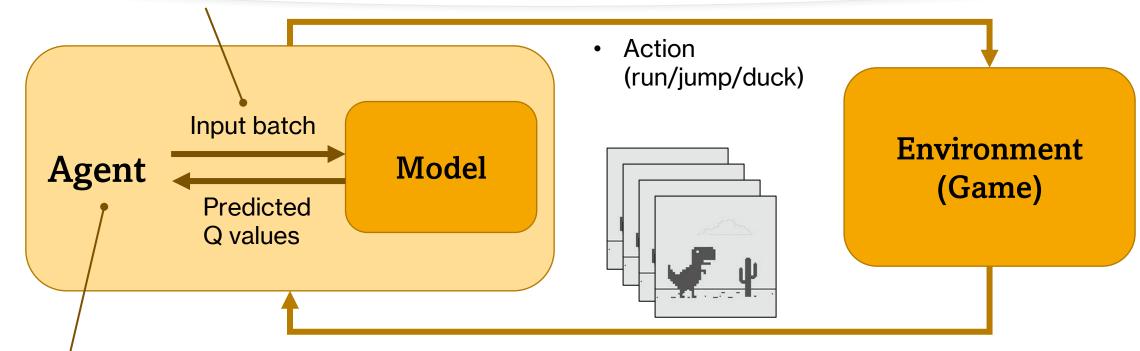
### **Problem statement**

To train a model to play the Chrome Dino game



## **Methodology: Deep Q Learning**

(current state, reward, next state, game over)



- Perform data pre-processing
- Handles memory replay
- Train and test the model
- Selects action based on epsilon greedy policy

- State
- Reward
- Game over

Dies = -1
Pass Obstacles = 1
Otherwise = 0

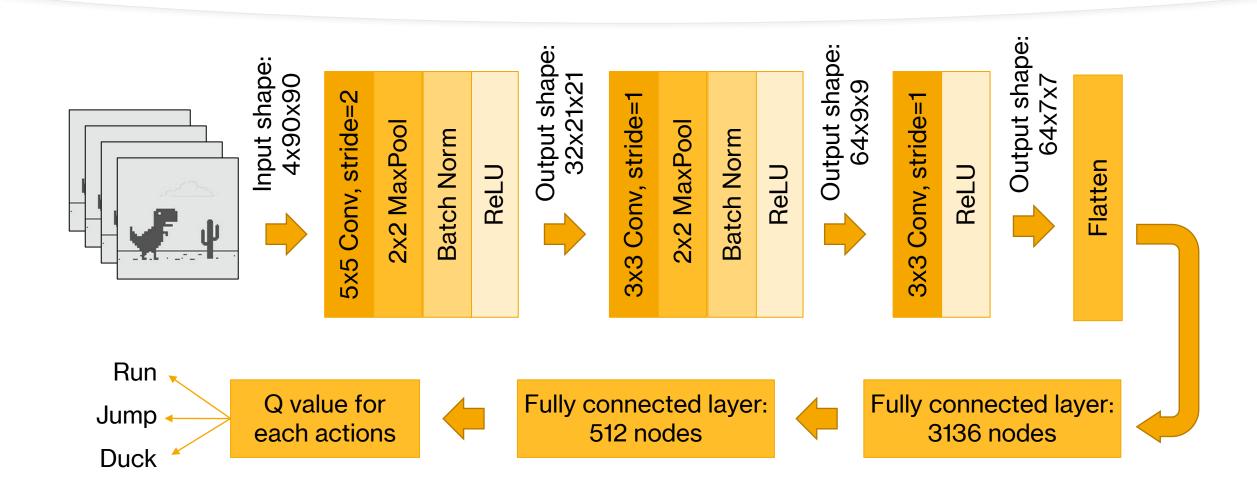
## **Methodology: Agent**



#### Training:

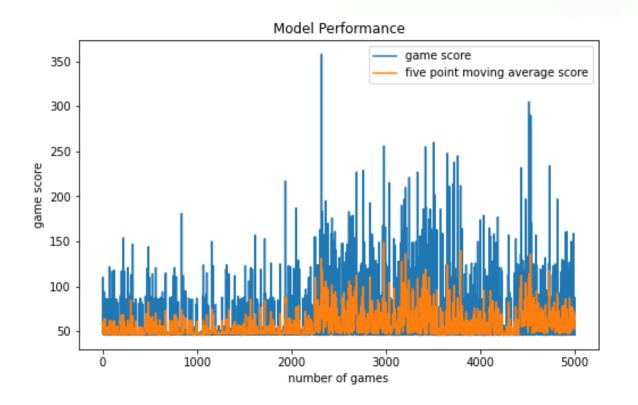
- Bellman's equation  $Q(s,a) = r + \gamma \max_{a'} Q(s',a')$
- Discount factor: 0.99
  - Model will be farsighted
- Mean Square Error between predicted and target Q value
- Adam optimizer (lr = 1e-4)

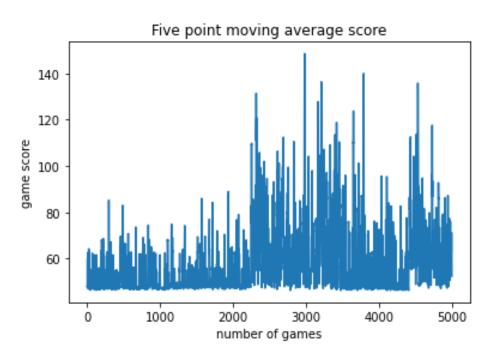
## **Methodology: Deep Q Learning**



## Results







# Q&A session