Policy gradient lab

Download the code for solving pong (keras adaptation):

https://raw.githubusercontent.com/mkturkcan/Keras-Pong/master/keras_pong.py

Adaptation to python3

- change the print syntax
- replace *model.iteritems* by *model.items*
- replace *xrange* by *range*

Speed

increase speed by modifying the learning rate to 10 −3

try different ideas of improvement

- read the code and observer the reward fonction
- reward shaping (positive reward if ball is hitting the spade)
  - need the detection of the event of hitting the spade
  - value of reward
- change the topology of the neural network :
  - 1 or 2 layers of convolution
  - 1 dense layer
- (modify the output : allow the possibility of no displacement)

For all of these ideas, compare the learning curve (score vs game number).