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- Team website : <https://github.com/mshabazi68/Comp680>
- Reinforcement learning

➤ **Seminar one:**

We will discuss what reinforcement learning uses in term of AI, machine learning and mathematics and what are the use cases in the real word environment. Second we will talk about what is the different kinds of the reinforcement learning and how we use AI to interact with environment in order to get the data we need and use the data to create a model with deep neural network. Finally we will review a project that use one of reinforcement learning techniques called “Cross entry” to master in one of simple openAI gym game environments.

- What is reinforcement learning?
 - RL formalisms and relations
 - Markov decisions processor
 - Model-free or model-based | Value based or policy based | On-policy or Off-policy
- Deep learning
 - Brief explanation on deep learning and neural network frameworks
- Cross entry

➤ **Seminar Two:**

Will continue by discussing another technique of reinforcement learning called “deep Q networks” and show ways for improving it. Also, will analyze policy Gradients method that is the updated Cross entry method that we discussed in seminar one. Then, will analyze and review the code for the actor critic method that uses most advantage points of different methods we talked about. And lastly will discuss about the continuous action space and how to use the methods with the environments that uses agents with continuous action. Topic listed in the following list.

- Deep Q-Networks, how to improve it.
- Policy Gradients
- The actor – critic method and ways to improve it.
- Continuous action space

➤ **References list:**

1. <https://skymind.ai/wiki/deep-reinforcement-learning#code>
2. <http://www.aaai.org/Papers/AAAI/1994/AAAI94-107.pdf>
3. <https://medium.freecodecamp.org/an-introduction-to-reinforcement-learning-4339519de419>
4. <https://arxiv.org/pdf/1811.05521.pdf>
5. <https://towardsdatascience.com/deep-double-q-learning-7fca410b193a>