

# Renju game with deep reinforcement learning project plan

Rak Arina

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## Week 1:

- Visualization, possibly adapting an existing implementation
- Creating an environment:
  - Defining terminal states, states available from current
  - Checking move validity

## Week 2:

- Creating the first version of neural network:  $f_{\theta}(s) \rightarrow (p, v)$
- Improving policy by training the network
- Adjusting learning parameters

## Week 3:

- Improving policy by making a model play with an older version of itself
- Training a separate model on professional games and making it compete with the one learning from zero
- Implementing a cropped game tree
- Integrating the tree into neural network

## Week 4:

- Developing the tree, turning it into MCT
- Integrating the tree into neural network
- Improving policy by making a model play with an older version of itself

## Week 5:

- Improving MCT
- Improving the network
- Adjusting the parameters
- Implementing the ability of participating in a tournament