

# An Experimental Comparison of Reinforcement Learning Approaches on MOBA

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**Abstract.** The abstract should briefly summarise your work and expected outcome.

**Keywords:** MOBA · Reinforcement learning · Game AI · Multi-scenario.

## 1 Introduction

You can write the introduction after finishing other sections.

Put some sentences to explain what does MOBA refer to, and name some MOBA games as examples.

The Multiplayer Online Battle Arena (MOBA) refers to ... Examples include

...

List some of the research work on MOBA and describe the platform/games that they use.

Describe the importance of having a good benchmark/platform for studying MOBA.

You should discuss about the state-of-the-art RL approaches/techniques for MOBA. You can write this part after finishing background.

Describe your motivation on working on improving the platform and comparing RL for MOBA here

... motivates us ....

*Tasks*

List your tasks. Literature review, set up the environment, practice, train new agents, improve the environments, etc...

*Contribution*

Summarise your work and the expected outcome. Highlight the research questions.

## 2 Background

### 2.1 Multiplayer Online Battle Arena (MOBA)

Explain what does MOBA refer to, and name some MOBA games as examples.

Emphasise how MOBA games are popular, give some numbers of market and players.

You may need to discuss about the difference between RTS and MOBA.

### 2.2 Existing Platform/Benchmark for MOBA

You may need to list the existing platform/benchmark/games for studying MOBA, and list their pros and cons.

### 2.3 Reinforcement Learning for MOBA

Review the research work that applied Reinforcement Learning to training agents for MOBA games, in particular, the papers published by DeepMind, Tencent, OpenAI, Microsoft, University of Alberta, etc. There are some researchers in Japan and Korea who work on MOBA as well. I think Nanjing University also have some?

You need to cite the papers, describe their work and discuss about their pros and cons.

This part is very important, as you will compare RL approaches.

## 3 Platform: name of the platform

Describe the platform and its structure

Ask your supervisor of Tencent, if you can describe the platform and its structure here without making their code public. Ask your supervisor of Tencent, if you can use screenshots of the game playing.

List the limitation of the current platform, so that you are clear what you can improve.

## 4 Experimental Study

### 4.1 Task 1

Change the subsection title to your task.

Describe this task.

**Experimental setting**

Describe how did you do it.

**Experimental results**

Give the experimental results of this task, using table of numbers, curves, figures, etc.

**Discussion**

Discuss the results

What you observe and conclude

#### 4.2 Task 2

Change the subsection title to your task.

Describe this task.

**Experimental setting**

Describe how did you do it.

**Experimental results**

Give the experimental results of this task, using table of numbers, curves, figures, etc.

**Discussion**

Discuss the results

What you observe and conclude

#### 4.3 Task 3

Change the subsection title to your task.

Describe this task.

**Experimental setting**

Describe how did you do it.

**Experimental results**

Give the experimental results of this task, using table of numbers, curves, figures, etc.

**Discussion**

Discuss the results

What you observe and conclude

add more subsections of tasks, if needed.

## 5 Conclusion

Summarise your work

Emphasise the contribution of this work

List the advantages of your approach.

Usability and scalability of this approach (it can be applied to other ... ...)

## 6 Future Work

TODO

*Weekly plan*