Research on High School Math Exercise Recommendation Based on Graph Neural Network

Wangzhihui Mei

University of Wollongong

maywzh@gmail.com

March 23, 2021

Overview

Background

- Knowledge State Monitoring
- Learning Resource Recommendation
- High School Math

Problems

- Disorganized exercise corpus lacking knowledge tags
- Hard to evaluate the knowledge mastery status
- Difficult to find appropriate exercise for improving knowledge mastery

Metrics

Exercise knowledge labels

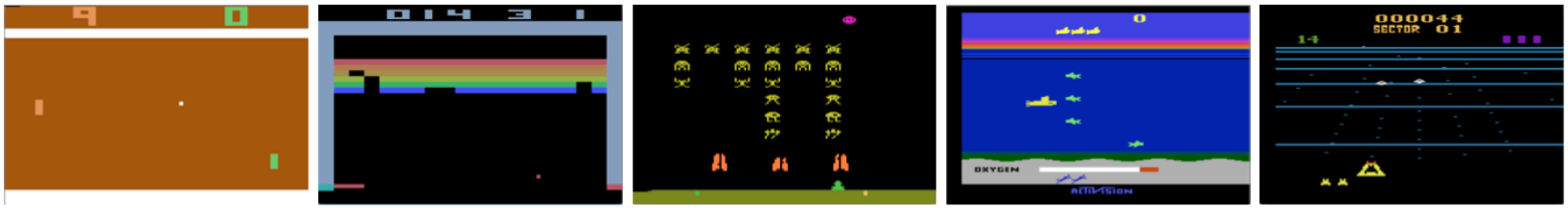
Disorganized exercise corpus lacking knowledge tags

Knowledge evaluation

Hard to evaluate the knowledge mastery status

Difficult to find appropriate exercise for improving knowledge mastery

Knowledge Tagging



Knowledge Tracing

Exercise Recommendation

Block 1

content

Block 2

content

Block 3

content

Exercise Knowledge Tagging

Heading

1. Statement
2. Explanation
3. Example Table 1

Table

Table: Table caption

Treatments	**Response 1**	**Response 2**
Treatment 1	0.0003262	0.562
Treatment 2	0.0015681	0.910
Treatment 3	0.0009271	0.296

Theorem

Theorem (Mass-energy equivalence)
$E = mc^2$

Verbatim

Example (Theorem Slide Code)

```
\begin{frame}
\frametitle{Theorem}
\begin{theorem}[Mass--energy equivalence]
$E = mc^2$
\end{theorem}
\end{frame}
```

Figure

Uncomment the code on this slide to include your own image from the same directory as the template .TeX file.

Citation

An example of the `\cite` command to cite within the presentation:

This statement requires citation [SST10].

References I


Ohad Shamir, Sivan Sabato, and Naftali Tishby, *Learning and generalization with the information bottleneck*, Theoretical Computer Science **411** (2010), no. 29-30, 2696–2711.

The End