

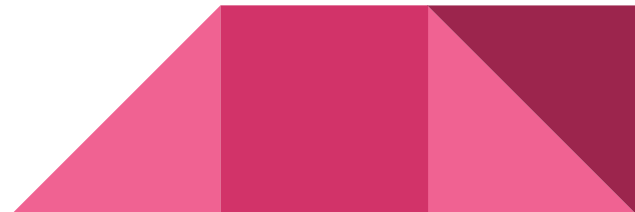
BERALL: Towards Generating Retrieval-augmented State-based Interactive Fiction Games

Rachel Chambers, Naomi Tack, Eliot Pearson, Lara J. Martin, Francis Ferraro

University of Maryland, Baltimore County Baltimore, MD, USA

Agenda

1. Summary
2. Architecture
3. Strengths
5. Weaknesses
6. How it relates to Interactive Fiction/Story Generation?
7. Questions



Summary

- **Focus:** The paper focuses on making a system that can generate text adventure games by keeping track of states of games, making detailed location description, and combining these things to help in developing a easy to understand UX.
- **Problem:** The paper mainly proposes a solution of creating games that have a core storyline and game play features to be followed as players interact with the game.
- **Solution:** The proposed system BERALL, which take into account LLM's to produce text adventure games. This system utilizes BERT2BERT model, RAG (Retrieval-Augmented Generation), Llama 2.



What is knowledge graph?

It is a representation of data that shows the relationship between different types of entities or different types of concepts.

These relationship should be human understandable.

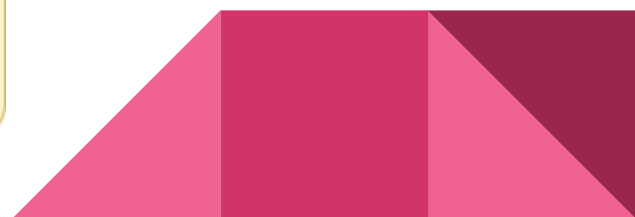


Retrieval-Augmented Generation (RAG)

Retrieve information from documents

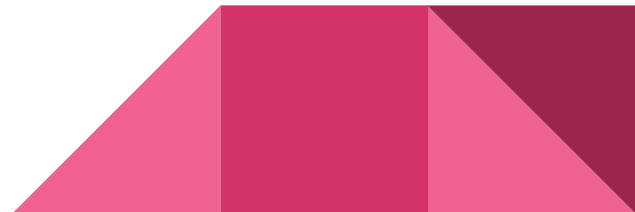


Generate new text information

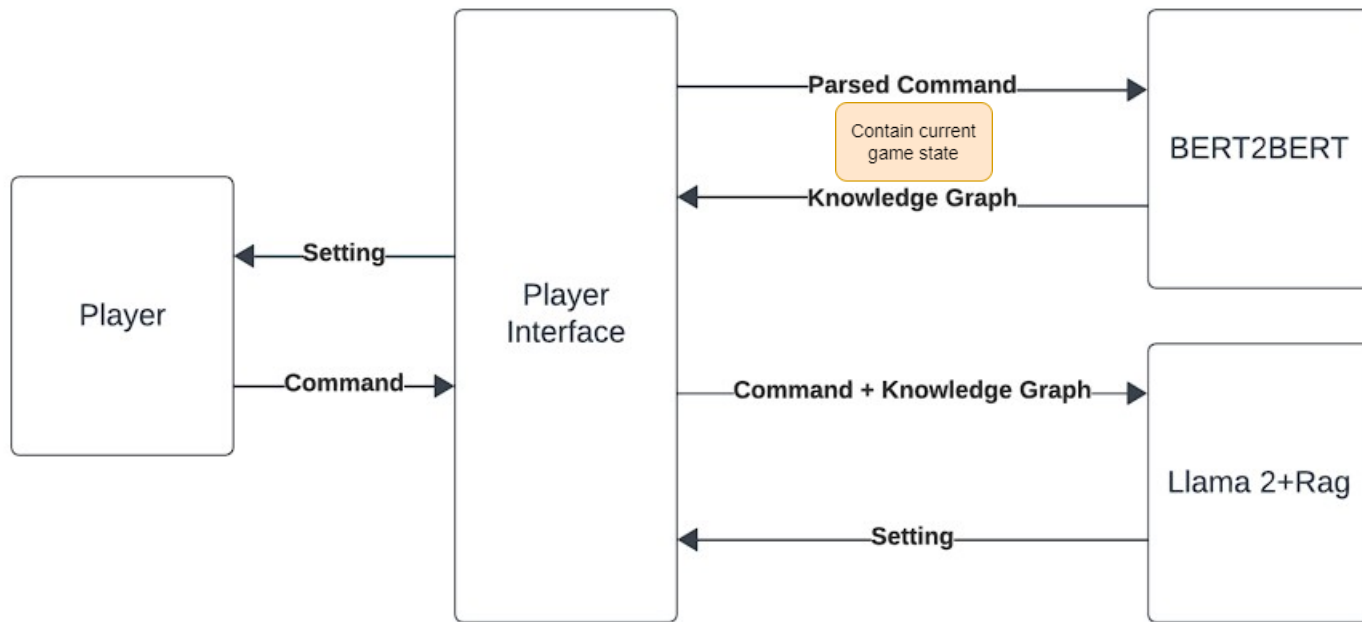


Dataset

- 500 transcripts of Club Floyd playthroughs of test adventure game
- JerichoWorld dataset



BERALL system architecture



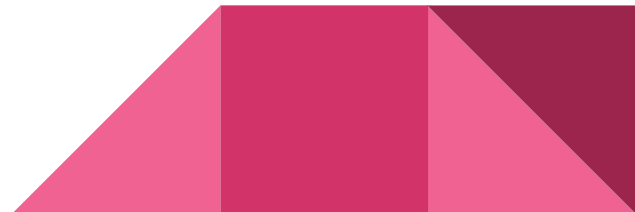
Strengths:

- They utilized RAG which was not used in previous works.
- Knowledge graph for state tracking used.
- This have UI so that people can interact with the system



Weakness

- System is complex, as it have many components.
- Sometimes BERT2BERT model not able to generate accurate state.
- Less types of datasets are used so the system is less generalizable.
- High GPU's needed.



How it relates to Interactive Fiction/Story Generation

Story Generation:

- So all the components are used to create a story which keeps on evolving based on the commands that we enter. That is how it is related to interactive fiction.

Interactive Fiction:

- This is related to interactive fiction as based on the user commands a different settings and knowledge graphs are created.





THANK YOU!

QUESTIONS?