

Abstract

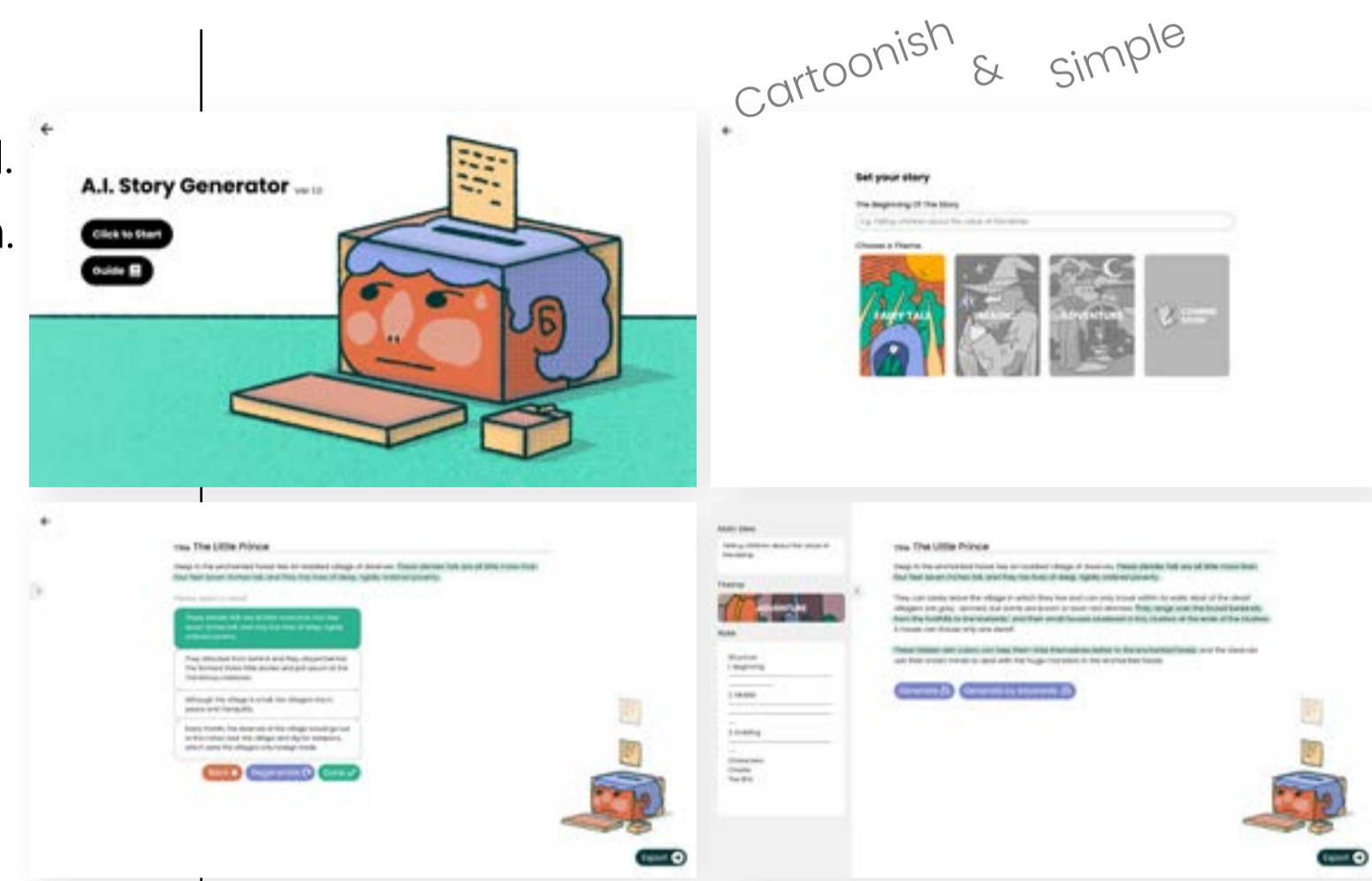
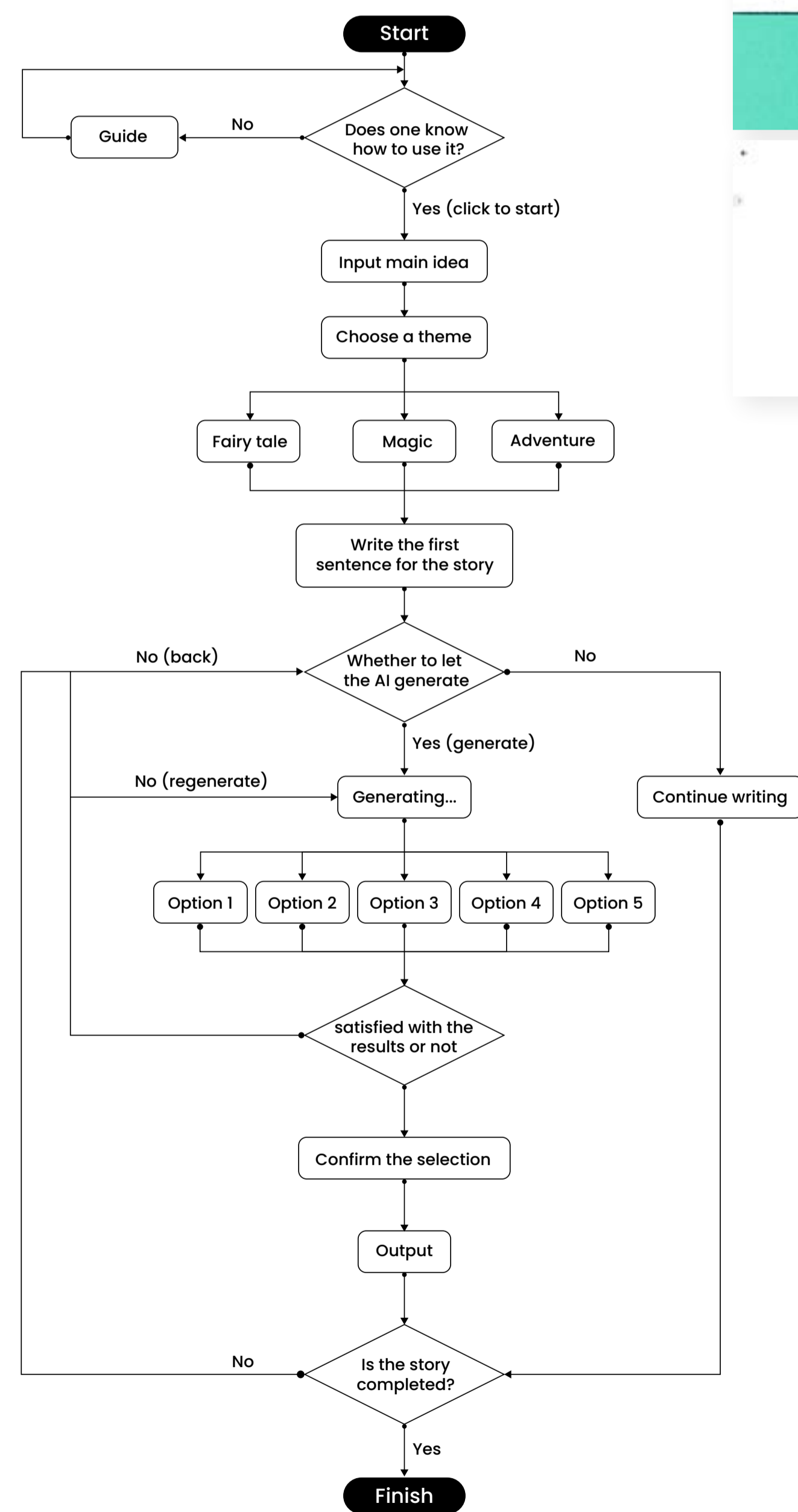
This is a problem-focused research project, the main feature of this project is: to study and explore from the perspective of a user experience designer what role and how much value AI technology can play in people writing children's stories. This project designed outputs of an AI model for generating stories, completed the interface design, conducted tests of writing stories and evaluation of stories using qualitative research methods, and ultimately drew conclusions from analysis.

Introduction & Background

AI is ubiquitous in people's daily lives today and the field of NLP (Natural Language Processing) is constantly evolving with applications in several areas such as translation, information retrieval, intelligent conversation and making it possible for AI to do writing as well. Parent-child time and reading are extremely important means of learning and entertainment during one's formative years, so how would it work if AI was involved in parent-child interaction and storytelling? In this project, I worked with Netmind to orientate the research in the area of children's stories. We used OpenAI's GPT-2 model for training to implement the interactive features of our web page, debugging it until it achieved the desired performance and finally reached a standard that could be used for testing.

Diagram / Design

- Define the flow of interaction with the AI.
- Low fidelity and high fidelity web design.



Study Methodology

Research on children's storytelling needs, preferences and habits was conducted for this project, and the results of this research directly helped me to orient my design and experimentation.

- Literature research
 - Interview
 - Experiment
 - Questionnaire
- Identify the need for children's stories.
 - Summarise the habits of people writing stories.
 - Conclude the criteria for evaluating stories.

Testing & Evaluation

Subjects worked independently on story creation.



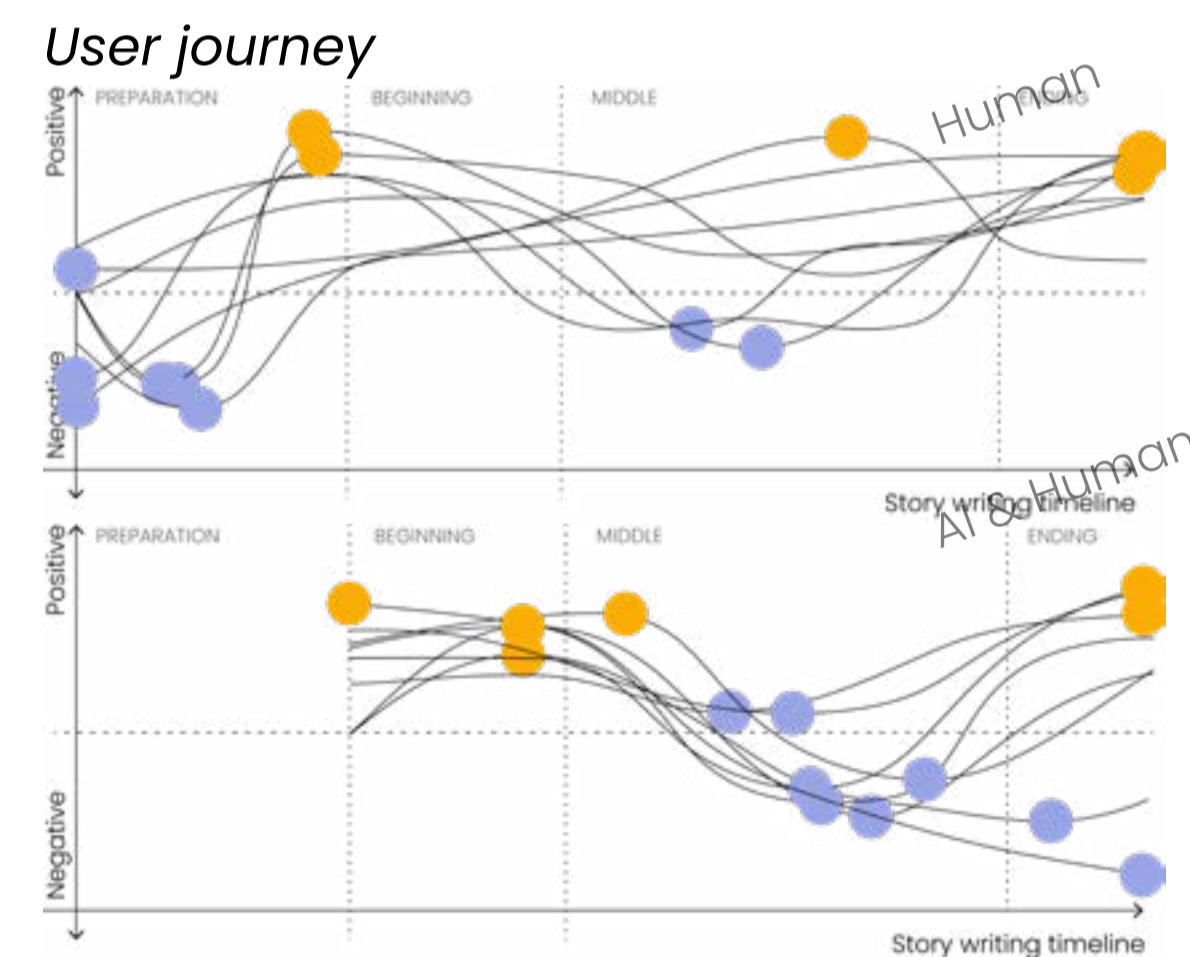
Subjects worked with the AI on story creation.

Documentation of the test



The other subjects evaluated the stories without knowing how they were created.

Research Results



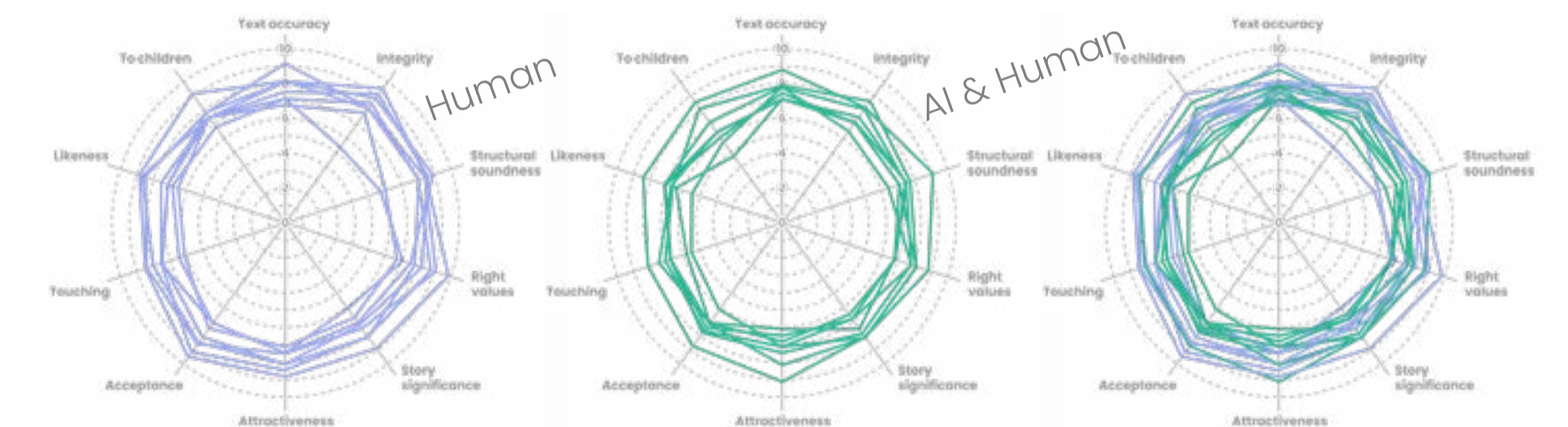
Human: The lowest point of emotion was mostly in the first half. The subjects mostly encountered difficulties in the conceptualisation phase.
AI & Human: Fewer problems are encountered in the early stages, but the plot progresses with difficulty towards the middle and later parts of the story.

Percentage of energy distribution



The distribution of the subjects' writing energy from the interviews also shows that when the subjects interacted with the AI, they spent less energy in the preliminary stage and, correspondingly, they spent a greater proportion of their energy on the writing process.

Story evaluation



- Overall, the AI & human-written stories are slightly worse.
- The involvement of AI may make the story unsuitable for children.
- Stories written independently by humans are more widely accepted.
- The involvement of the AI gives the story a more unified style.
- One can hardly distinguish the form in which the story was created.

After training and testing the AI model, the final interaction model was determined to be one in which the AI generates multiple options and the human selects and ties together the entire story.

Conclusions & Future Work

This project is an exploration of the use of AI in children's storytelling. This research illustrates that it is possible for AI and humans to collaborate on creative work under the right interaction model. Due to time and equipment constraints, there is still a lot of room for improvement in the performance of the model for this project. In future work, I will work with the company to further optimise the model, and hopefully it will perform better in the future!

