StoryTime: Eliciting Preferences from Children for Book Recommendations

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ABSTRACT

We present StoryTime, a book recommender for children. Our web-based recommender is co-designed with children and uses images to elicit their preferences. By building on existing solutions related to both visual interfaces and book recommendation strategies for children, StoryTime can generate suggestions without historical data or adult guidance. We discuss the benefits of StoryTime as a starting point for further research exploring the cold start problem, incorporating historical data, and needs related to children as a complex audience to enhance the recommendation process.

CCS CONCEPTS

• **Information systems → Recommender systems**; • **Social and professional topics → Children**; • **Human-centered computing → Human computer interaction (HCI)**.

KEYWORDS

Kids; cold start; recommendations; preference elicitation; interface

1 INTRODUCTION

Reading is an important foundation for children to excel at learning. To help nurture reading skills it is vital that children find books that are not only within their reading level but also reflect their interest, as to keep them engaged [4]. Our recommender, StoryTime[1], aims to help children with book suggestions by eliciting children's interests without relying on historical data or adult help, in a manner tailored for them. It used to be that to get a book recommendation you would need to go to a library. The draw being there is an expert, a librarian, who could offer suggestions. Children may not feel comfortable approaching a librarian. As many children regularly use the internet, a web-based recommender may be the answer. Book recommendation websites exist for adults in droves, but there are

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[1]StoryTime is available at https://boi.st/StoryTime.

very few to specifically support children. This could be attributed to, in part, the practical and privacy issues in obtaining historical data related to children required by most recommendation techniques. Even among these known strategies the interface is designed for adults; Children have different interface needs and preferences, such as favoring visual rather than textual representations [1]. We focused on creating a simple interface for StoryTime that caters to children's preferred interface experience and simulates a similar result as interacting with a librarian. The design of StoryTime was informed with input from KidsTeam, a child participatory design group at Boise State, who we worked with during the development phase.

2 EXISTING SOLUTIONS

The closest interface to StoryTime is the International Children's Digital Library (ICDL) user interface/ visual book search. This interface is geared towards children with its use of large icons and images to account for the wide range of reading abilities present in its audience [2]. Buttons are used for input and are loosely grouped into categories, with each having 2 to 6 options. Once an option is selected, buttons of options that do not mix with the current selection are grayed out. After every selection the results window updates to reflect matching books and continues to update each time an option is added or removed. This is one of the few, well-known environments targeting children for finding books. However, it visually supports boolean queries, as opposed to offering recommendations based on children's interests.

Recommendation strategies that most align with StoryTime's include Rabbit (Readers' advisory-based book recommendation tool) [3] and BReT (Book Recommendations for Teachers) [4]. Rabbit mimics the reader's advisory process offered at libraries by considering description, appeal factors, library of congress subject headings and reading levels of books. It uses users' historical data, in the form of ratings, to personalize suggestions. However gathering this kind of historical data for children is challenging making it not always feasible to use.

Like StoryTime, BReT does not require user data in order to generate recommendations. Instead, it depends on grade level, content description, theme, and literary element descriptions provided by teachers in order to suggest books for students. We argue that while it may be intuitive for teachers to descriptively state preferences and use domain-specific terminology, children will likely find it challenging. The StoryTime recommender simplifies this input process to be usable directly by children. It also eases the process of gathering users' choices, which are the cornerstone of StoryTime's suggestions.