

# Finding and Filtering Information for Children

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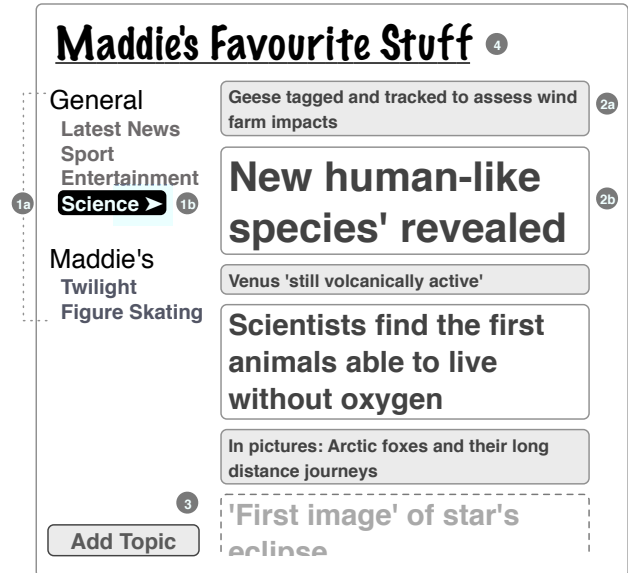
## Extended Abstract

Children face several challenges when using information access systems. These include formulating queries, judging the relevance of documents, and focusing attention on interface cues, such as query suggestions, while typing queries [3]. It has also been shown that children want a personalised Web experience and prefer content presented to them that matches their long-term entertainment and education needs [2]. To this end, we have developed an *interaction-based* information filtering system to address these challenges.

The system, a prototype developed within the PuppyIR project [1], is initialised by supplying a list of manually selected and vetted syndication feeds. We use sources such as the BBC and other reputable providers to overcome the problem of content moderation<sup>1</sup>. Interaction with the system facilitates topic discovery over time; however, a default set of topics are defined to deal with the *cold-start problem*. Feeds are periodically fetched and split into individual feed entries, which are checked against existing content to ensure they are unique. Finally, documents are filtered for a topic using the Okapi BM25 scoring function with the topic definition acting as a query. Filtered documents are presented in reverse chronological order and the document-query score is used to create visual cues in the presentation of results.

The system interface is shown in Figure 1. The set of default topics are shown above the set of discovered topics (1a). In this example, the *Science* topic has been selected (1b) and the list of documents titles filtered for this topic are presented to the child. The amount of space used in presenting a title indicates the relevance of a document, as shown by comparing a somewhat relevant document (2a) and a strongly relevant document (2b). Children are also able to manually define a new topic (3), if needed, and personalise the interface (4), such as the customizing the title, colour scheme and style.

<sup>1</sup>This decision allows us to focus on filtering documents from the syndication feeds according to a set of topics.



**Figure 1: Interface showing default and personalised filters, variable title size and user personalisation**

When a child clicks on the an item in the list, for example (2b), the remainder of the document is presented (not shown). This interaction is used to update the system's knowledge about the child's interests. The history of interaction actions is subsequently used to learn the set of discovered topics (1a), to provide a personalised experience.

The interaction-based information filtering system presented offers a novel approach to the challenges faced by children. By inferring the topics of interest over time, instead of relying on explicit queries, query formulation becomes optional. The subsequent reduction in queries allows the child to fully focus their attention upon the information presented. Finally, by varying the amount of space used for each document title, relevance cues are clearly expressed in a simple and intuitive manner.

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## 1. REFERENCES

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