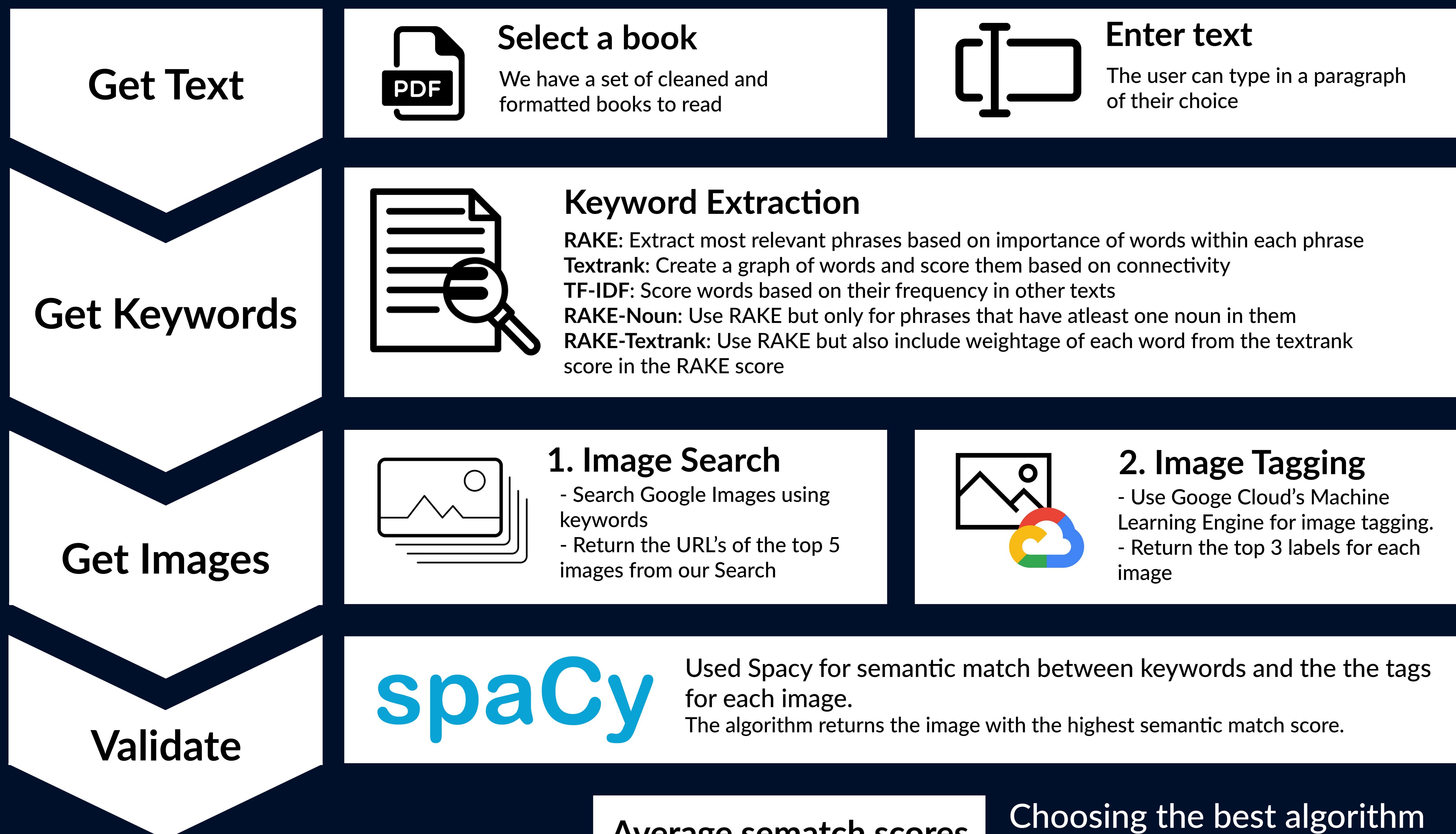
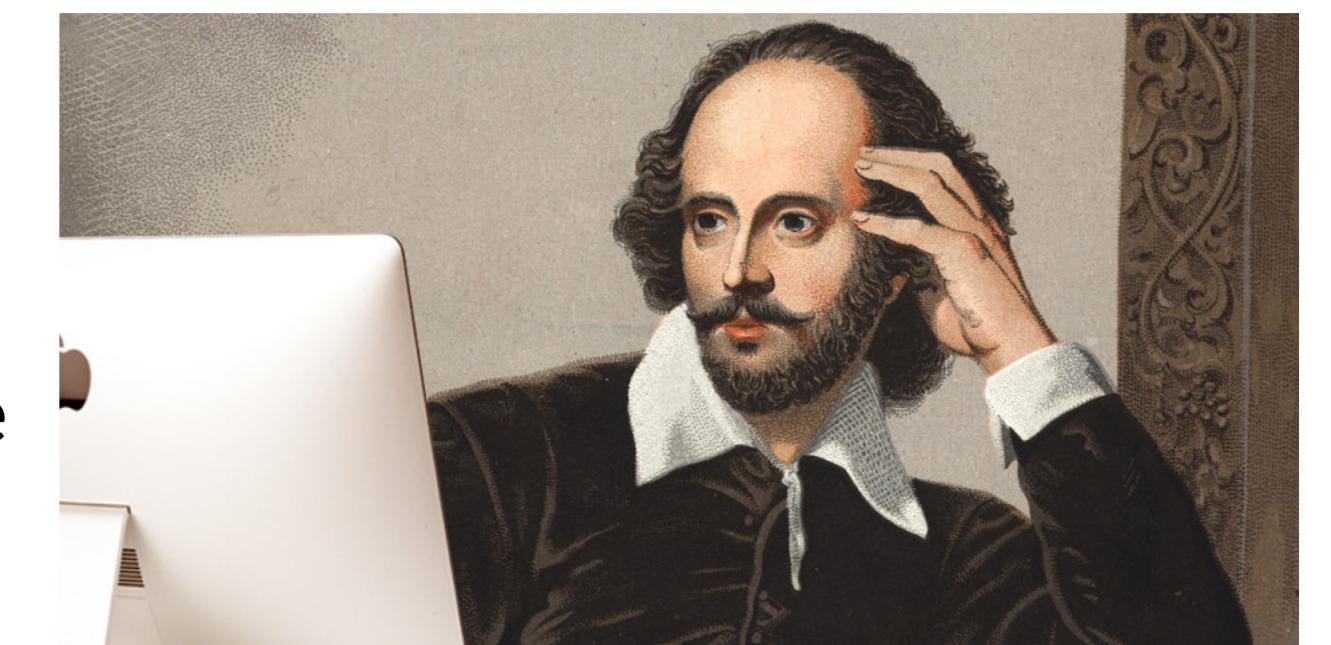


# Img-ify Adding visuals to text through NLP

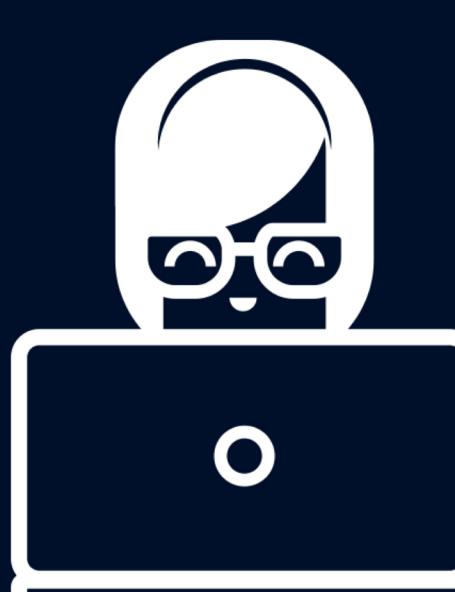
Srinath Abburi, Swati Gupta, Dakota Hauesler, Ali Lakdawala, Elizabeth Stanford, James Wiggins

## Motivation: Pictures boost understanding and retention

There is an overabundance of books that are difficult to read due to a lack of images and visuals that make them less accessible to young readers. Other readers face problems retaining and comprehending text in our increasingly distracted world. Research shows that seeing pictures along with text increases both retention and understanding. We created a program to increase reader's comprehension, retention, & enjoyment by populating a body of text with relevant images.



## Relevancy score: 56%



We categorized the images for the first 10 paragraphs of 5 books as relevant or not relevant. The ratio of the number of relevant images and the total images gives the relevancy score for each book. To calculate the final score, we averaged across all the books.

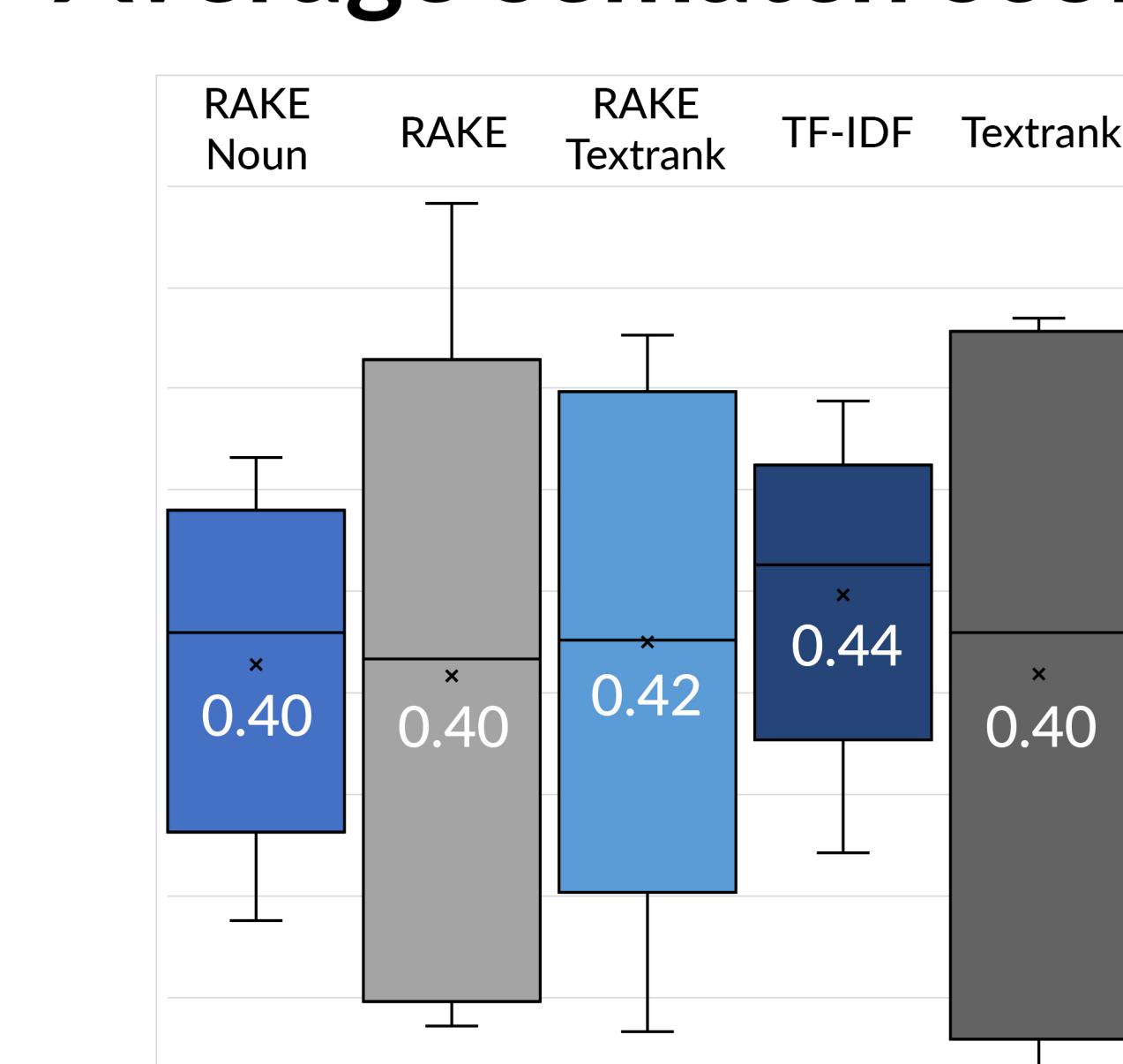
Survey results:  
Perceived Relevancy of Images

### Survey results: Relevancy of images generated



Only 12% of respondents said that the program generated either a very irrelevant or irrelevant image. More than 50% of respondents found the images relevant or very relevant.

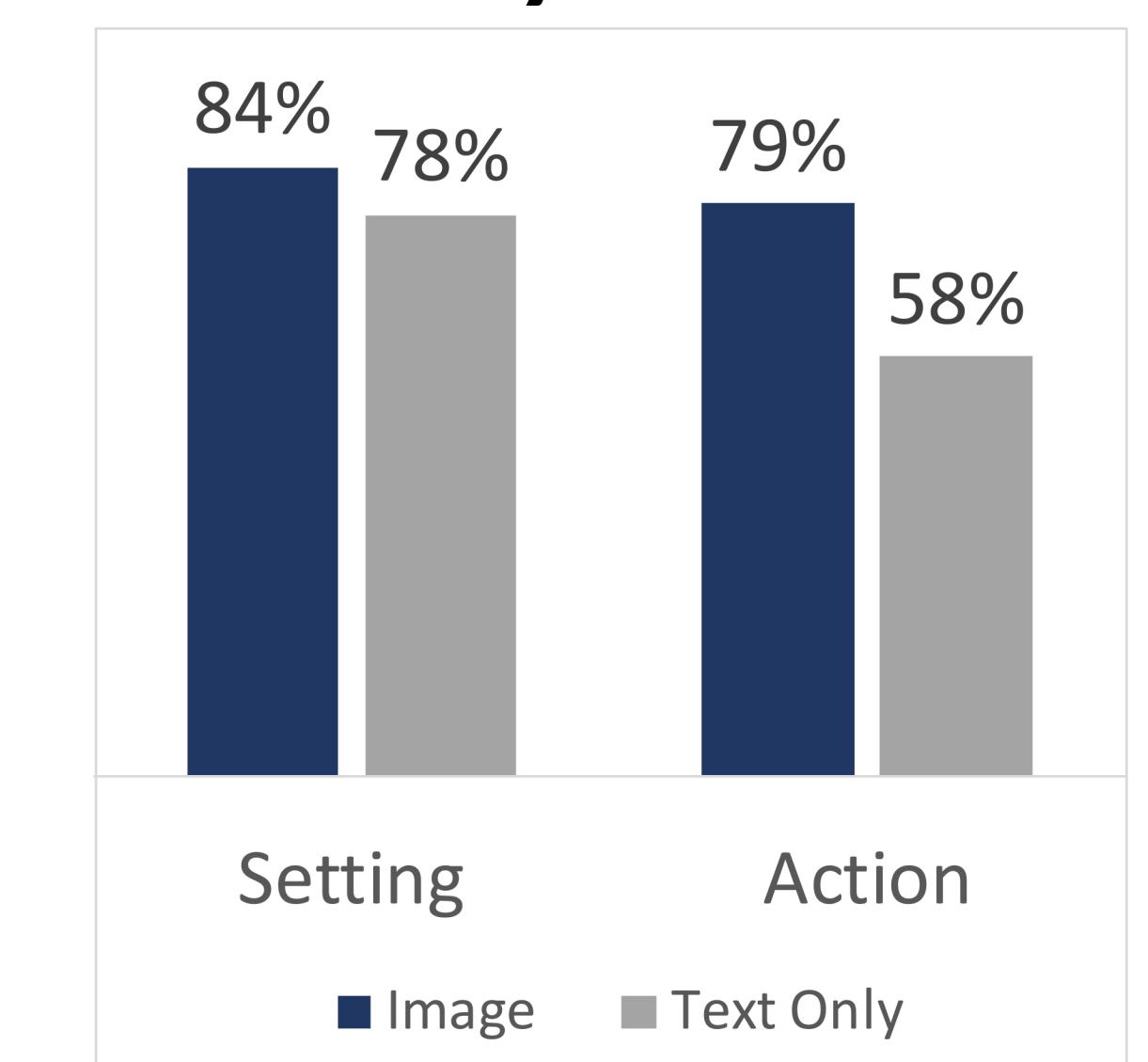
### Average sematch scores



### Choosing the best algorithm

We ran the semantic match for all the images generated by the five algorithms on five different texts. TF-IDF had the highest average with lowest variance. Hence we selected TF-IDF.

### Percentage of questions correctly answered



### Survey results: Retention

Respondents consistently remembered more information after seeing a relevant image. For paragraphs describing a setting recall increased by 6% for respondents and for paragraphs describing an action recall increased by 21%.