

Abstract

PITARIE is a system that finds the appropriate picture books depending on the developmental stage of children. Reading timely and apposite picture books not only helps advance the child's vocabulary and emotional development but also promotes the communication with the child. We aim to provide evidence-based assistance for education in infancy and childhood by presenting apposite picture books based on the human science as well as the information science; we not only utilize the latest advances in the research fields of similarity search and natural language processing, but also introduce the knowledge in developmental psychology. We are conducting joint experiments with a local government and an NPO to increase the availability of PITARIE.

PITARIE allows you to search picture books ...



- ❑ with your vague memory by typing the rough story.
- ❑ in the similar topic and with the same text readability.
- ❑ that have the similar taste of drawing and writing to your favorite ones.

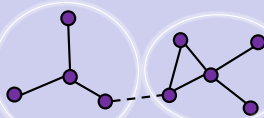


Fusion of Information Science and Human Science

Similarity Search

Fast and versatile algorithm based on graph index

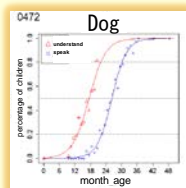
- “You can meet anyone by visiting a friend of a friend six times;” we apply the six degrees of separation to fast search.
- Applicable to texts, images and speeches.



Developmental Psychology

CLD DB:
the Child Language
Developmental database

- “The month ages when words are likely to be understood and spoken” are modelled based on the data collected from over 1300 children at age of 0-3.



Natural Language Processing

Hiragana-specialized morphological analyzer and text readability estimation

- The Hiragana only sentence, a tough condition for existing morphological analyzer, can be accurately analyzed.
- Text readability of picture books can be estimated by CLD DB and text features such as length of a sentence.

Aha!
A book
readable by
a 2-year-old!



【Reference】

- [1] T. Hattori, S. Fujita, K. Aoyama, “Picture Book Similarity Search by Fusing Multiple Linguistic Features,” Proc. 29th Annual Conference of JSAI, 2E4-NFC-01b-5, 2015. (in Japanese)
- [2] S. Fujita, T. Kobayashi, Y. Minami, H. Sugiyama, “Target Age Estimation of Texts for Children,” Cognitive Studies. Vol. 22, No. 4, pp. 604-620, 2015. (in Japanese)

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