不十分な情報から開始するデータグルーピングのための
マイクロタスク設計に関する研究

A Study on Microtask Design for Data Grouping
without Complete Information

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The problem of dividing a given set of data items into groups in the situation that the given input is not sufficient to solve it has a wide range of applications. However, the problem cannot be solved by computers alone. This paper defines the Bookshelf problem to deal with such a problem and discusses how to solve the problem with the help of humans. Intuitively, the Bookshelf problem is as follows. Given a set of books with tags and a book cabinet with N shelves, we need to construct N groups of books s.t. all books in each group share at least one common tag. However, the given tags and their connections to books may not be sufficient to make groups, and we have to find the missing tags and connections. This paper proposes a systematic human-in-the-loop method that uses two types of microtasks to solve the problem, and experimentally shows that human intelligence is effective to avoid the worst-case search.

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