

先端科学技術研究科 修士論文要旨

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要旨			
Item-finding tasks due to memory lapse are costly activities commonly experienced by many people. However, item pre-registration, privacy protection for multi-users, and item search methodology have various issues left unresolved. Therefore, we propose a multi-functional, pre-registration-free, and 3D location-based item management system. The system has two main functions: registration and search. The automatic registration is performed by image-based item movement recognition from the user's grasping and placing motions. The registered item movement data comprises the item category, and the start and end locations. We ensure privacy protection by storing item movement data without images. Also, we provide a user interaction to refuse to share the items with other users. The search is based on the item list or item location. The location-based search is performed by specifying where the user last saw the item. To optimize and test the performance of the system, we performed two studies: parameter optimization and a search experiment. The parameter optimization performed in the auto-registration experiment led to the discovery of optimal values that are difficult to reach empirically. The search experiment showed that the proposed system's search and guidance functions are effective as an assistance system for finding items, both in terms of search time and user experience. Overall, our system demonstrated the potential to be a useful assistance system for managing items in a shared space. We further discuss the possibility of further exploiting the limited registered information by treating item location as an identifier of the moved item.			