論文の内容の要旨

論文題目　A STUDY ON SOFTWARE TOOLS FOR FLEXIBLE PRESENTATIONS
（柔軟なプレゼンテーションのためのソフトウェアの研究）

氏　名　栗原　一貴

It is difficult to give flexible presentations using existing software tools. Presentations have various dynamic properties because they involve human-human communications and live performances. However, most presentation systems are designed to present prepared material organized in a linear sequence of slides. They suppose that what the presenter tells, where and how the presentation is given are fixed in advance, making it difficult to adjust presentations in time when some disturbance arises.

In this dissertation, we focus on three dynamic properties of presentations and explore the possibility of supporting them using computers. We demonstrate how flexible presentation tools can enrich the methodology of presentations with the following four example systems. KOTODAMA and Speech Pen allow the users improvisational editing of presentation materials. They explore flexibility to deal with a dynamic property of presentation: interaction with the audience. The KOTODAMA system is a pen-based presentation tool developed by a participatory design process with school teachers. Longitudinal studies show the importance of the improvisational editing functionalities that are easy to manipulate. The Speech Pen system is a predictive handwriting tool. Handwriting is an effective but tedious improvisational method for presentations. This system predicts possible next words using recognition technologies and allows the user to paste them on the screen to skip manual writing. KOTODA-MULTI provides the users with a framework of authoring, configuring, and giving multi-display presentations. It explores flexibility to deal with another dynamic property of presentation: diverse multi-display environments. This system decouples material authoring and display configuration by introducing a zoomable editing surface and view proxies that determine what to show on each display. A field study is also performed to investigate possible multi-display usages. Presentation Sensei allows the users to control their presentation delivery by providing them with a self-instructional rehearsing environment. It explores flexibility to deal with another dynamic property of presentation: presenters' psychological effects on the behavior. This system provides both online and offline analyses of the user's presentation delivery using speech processing and image processing. By its implementation and a small study, we show and discuss the feasibility and the effectiveness of machine-supported training systems that involve error-prone recognition technologies.

Independently, each of these systems contributes to the improvement of existing applications. However, taken together, they form a new space of the feasible presentation methodology. Tools tend to define and limit the way presentations are given today. Flexible presentation tools would relax the current constraints and allow the user to control the degree of commitment on each stage of a presentation: authoring, configuring, rehearsing, and giving.