

# **Abstract**

## **Multimodal Interface Design for Multimodal Meeting Content Retrieval**

The goal of this thesis is to assess whether multimodal input brings added value to interaction for the multimedia meeting browsing and retrieval domain, and if it does, what the nature of that interaction is. In our work we define 'added value' in terms of increased efficiency when compared to standard mouse and keyboard input, the usefulness of multiple modalities, and overall subjective user satisfaction when interacting multimodally in an interface.

In particular, we are interested in the benefits and drawbacks that novel input modalities such as voice and pen bring to interaction, especially in the presence of more familiar modalities such as the mouse and keyboard. Our work focuses on six central questions: 1) how often are different modalities used, alone and in combination, for meeting browsing and retrieval tasks, 2) do certain modalities or modality combinations lead to an increase in efficiency, 3) does modality use change when a user encounters a problem during interaction, 4) how do users perceive different modalities, 5) does learning to use a system with a particular set of modalities influence how those modalities are used when other modalities also become available and 6) are some modalities more suited to finding certain types of information than others?

We answer these questions through the analysis of results from a large-scale user-centered study we conducted using Archivus, a multimodal system for multimedia meeting browsing and retrieval, which was specifically developed for this type of research. We also discuss the development of the Archivus system itself, as well as the difficulties encountered when designing an experimental protocol for the types of experiments necessary to answer the above questions, and the solutions we found and adopted.