A Collaborative Video Search System

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ABSTRACT

This paper describes the Dublin City University collaborative video search system. The system is a development on our 2007 VideOlympics submission in which we explore the notion of division of labour and sharing of knowledge across collaborating users engaged in a shared search. Division of labour and sharing of knowledge across collaborating searchers is realised through system-mediated coordination of the search on desktop computers.

Categories and Subject Descriptors

H.3.3 [**Information Search and Retrieval**]: Retrieval Models

General Terms

Algorithms, Design, Human Factors

Keywords

Video retrieval, interactive, collaborative

1. INTRODUCTION

At the VideOlympics at CIVR in 2007, DCU presented 'iBingo', a video search system for Apple iPod Touch and iPhone devices which allowed two or more people to search for video shots together [2]. Through iBingo we explored the application of concepts such as *division of labour* and *sharing of knowledge* [1] to video search. We also explored the notion of allowing users to explore different facets of their information need through trails. The division of labour policy allowed users to explore distinct aspects of the collection by reducing redundancy across the users. The sharing of knowledge policy allowed collaborating searchers to share search trails when one user had exhausted theirs.

At the 2008 VideOlympics we again investigate the notions of division of labour and sharing of knowledge, this time however through different manifestations of these concepts. Our search scenario consists of two users searching on two separate laptops with a collaborative "broker" system acting as a mediator to coordinate the search task between the two users.

The collaborative search system supports the concept of user-trails through the collection. This is facilitated by presenting users with multiple ranked lists of shots on their screen with each list corresponding to a distinct view of the collection. These lists are coordinated by the backend system to implement both our division of labour and sharing of knowledge policies. No two users are presented with the same shots on their screen, allowing redundant shots on a user's ranked list to be replaced by new shots which have yet to be judged. Furthermore, through multi-modal fusion of text and image features along with collaborative relevance feedback, the retrieval engine returns different sets of rankings to each user depending on their progress through their trails. This allows the results to be tailored to each individual user, thereby increasing the breadth of results across the users. The retrieval engine uses our previous work on dynamic query-time weighting of retrieval experts [3]. The system also provides awareness cues on-screen for each user. These cues allow users to see the progress of their collaborator throughout the search and can facilitate user-user coordination.

By coordinating the search task with both system-mediated techniques and awareness cues, the collaborative search system should allow for a more effective and engaging collaborative search experience for its users.

Acknowledgements

2. REFERENCES

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