# Context and Linking in Retrieval from Personal Digital Archives

Liadh Kelly
Centre for Digital Video Processing
School of Computing, Dublin City University
Dublin 9, Ireland
lkelly@computing.dcu.ie

## ABSTRACT

Advances in digital capture and storage technologies mean that it is now possible to capture and store one's entire life experiences in personal digital archives. These vast personal archives (or Human Digital Memories (HDMs)) pose new challenges and opportunities for the research community, not the least of which is developing effective means of retrieval from HDMs. Personal archive retrieval research is still in its infancy and there is much scope for novel research. My PhD proposes to develop effective HDM retrieval algorithms by combining rich sources of context associated with items, such as location and people present data, with information obtained by linking HDM items in novel ways.

## Categories and Subject Descriptors

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

## General Terms

Algorithms

## Keywords

Human digital memories, personal information management, context-based retrieval

## 1. INTRODUCTION

While a person's entire life experiences can now be captured digitally from a myriad of personal information devices including desktop computers, PDAs, digital cameras, and various sensors, including GPS, Bluetooth and biometric measures, little attention has been given to how the individual (or a descendent of the individual) might locate important relevant items in this new type of vast archive. This space is unique in many ways and provides a number of challenges for retrieval in that: items will often not have formal textual descriptions; many items will be very similar, repeatedly covering common features of the users life; items will often not be joined by inter-document links; the archive will contain much non-useful data that they will never wish to retrieve; the user may be unable to describe clearly what they are looking for; and the user may not even be aware that certain data items have been captured and are available for retrieval. We suggest that rich sources of context data and linking can be used to address these issues and provide people with effective ways to retrieve from their HDMs.


*SIGIR'08,* July 20–24, 2008, Singapore.
ACM 978-1-60558-164-4/08/07.

## 2. USE OF CONTEXT IN RETRIEVAL

Much research exists in support of the use of peoples' recalled memory of past interactions with items as a means to re-locate them. In a preliminary study [2] we demonstrated that context can be used to harness what a person remembers associated with an item and that recalled context combined with content only retrieval can improve results in the HDM domain. Following on from this we are currently engaged in large scale data collection (as part of the iCLIPs project [1]) to allow for further exploration of this topic. In particular my PhD work is focusing on the development of information retrieval (IR) algorithms specifically designed to address the challenges of HDMs. The core of this work is focusing on integrating rich sources of context data, such as those described in our previous work [1], into retrieval algorithms for the HDM domain. Additionally I hypothesise that linking items based on access patterns or item similarity will yield insight into the relationships between items and item importance. As such items will be linked within HDMs and the utility of the resulting linked structures in improving retrieval will be investigated.

In summary the main objective of this research is to develop methods to integrate automatically recorded and derived context data types into traditional IR algorithms for the HDM retrieval domain.

## 3. ACKNOWLEDGMENTS

This work is supervised by Gareth Jones, and funded by a grant under the Science Foundation Ireland Research Frontiers Programme 2006.

## 4. REFERENCES

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[2] M. Fuller and L. Kelly and G.J.F. Jones. Applying contextual memory cues for retrieval from personal information archives. In *PIM 2008: Proceedings of Personal Information Management, at CHI 2008*, 2008.

[1] http://www.cdvp.dcu.ie/iCLIPS/