

Sharing Human Digital Memories – Practical Challenges

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Abstract

Over the last few years computers and the way we use them have been evolving rapidly. Increasing performance, power and capacity has allowed the manipulation and storage of large quantities of multimedia data. Improved input and context devices, such as cameras, digital video recorders, and GPS modules have allowed an explosion of user generated content and effective recording of human digital memories. Ubiquitous wireless and mobile networking has provided the opportunity to share these memories, either with close friends and family, or as broadcasts across the Internet.

The potential now exists to capture, store and share practically everything a person sees and hears throughout their life, using a variety of devices. Yet while the physical capability has grown exponentially, the means to manage and use this rich media has not kept pace. The ability to manage this augmented media and recall it as multimedia memories remains a serious challenge.

In this talk we will look at how the analysis, sharing and correlation of digital multimedia is likely to provide new opportunities for recording, managing and understanding our memories in the future. Developments in image analysis can allow automatic annotation and improved searching. However the real benefits come from the network itself, and the opportunity to correlate memories between friends, family and others. Combining threads of events across multiple memory stores will allow the uncovering of a richer tapestry, providing a deeper insight into our own lives. It also introduces practical considerations relating to privacy, content protection and the efficiency of network sharing. We will consider these issues, looking at how understanding relationships can help to improve the efficiency of a peer-to-peer memory sharing system, and how techniques might be applied to maintain privacy in this environment.

Biography

Madjid Merabti is Professor of Networked Systems and Director of the School of Computing and Mathematical Sciences, Liverpool John Moores University, UK. He is a graduate of Lancaster University in the UK. He has over 20 years experience in conducting research and teaching in the areas of Computer Networks (fixed and wireless), Mobile Computing, Computer Network Security, Digital Forensics, Multimedia, Games Technology, and their applications. Professor Merabti is widely published with over 100 publications in these areas

and leads the Distributed Multimedia Systems and Security Research Group, which has a number of UK Government, EU, and industry-supported research projects. He is also Director of a newly created research Centre for the Protection of Critical Infrastructure (PROTECT www.protect-ci.org). He is principal investigator in a number of current projects in Digital Rights Management, Games Technology, Multimedia Networking, Mobile Networks Security and Privacy Architectures and Protocols, Secure Component Composition in Ubiquitous Personal Networks, Networked Appliances, Mobile and Ad-Hoc Computing Environments, and Sensor Networks.

He was Associate Editor for IEEE Transactions on Multimedia. He is Associate Editor for Elsevier Computer Communications journal, Co-Editor in Chief for the International Journal of Pervasive Computing and Communications (JPCC), Associate Editor for Wiley Journal of Security and Communication Networks, Area Editor for IEEE Communications Magazine series on Networked Appliances and Home Networking. He is member of the editorial board for Springer Peer-to-Peer Networking and Applications Journal, Advances in Multimedia Journal and the Journal of Computer Systems, Networks, and Communication (Hindawi Publishing). He was Guest Editor for the Special issue on “Research Developments in Consumer Communications and Networking” of the Kluwer International Journal of Multimedia Tools and Applications and Guest Editor for the Special issue on “Advances in Research and Application of Network Security” of the International Journal on Computer Communications.

Madjid Merabti serves on the steering committee for the IEEE Consumer Communications and Networking (CCNC) series of conferences, and the International Symposium on Ubiquitous Intelligence and Smart World. He is Conference Chair for the UK Annual Postgraduate Students Conference on the Convergence of Telecommunications, Networking and Broadcasting (PGNet 2000-2010), Co-chair for the Games Design and Technology series of Workshops (GDTW 2004-2007). He was Technical Programme Chair for the IEEE ICC Symposium in New Areas in Communications, Dresden, Germany 2009, Technical Programme Chair for the Symposium on Networking Security and Assurance, CHINACOMM, Beijing October 2006, the 2nd IEEE Digital Rights Management (DRM) Workshop, Las Vegas January 2006, IEEE Globecom 2004 Symposium on Security and Network Management, Dallas, USA, Oct/Nov 2004, chair for the 5th IEEE International Workshop on Networked Appliances, Liverpool, October 2002, and chair of the Wireless Multimedia track of IFIP Wireless Days, December 2009, amongst others. He is a member of a large number of international conference programme committees on networking, security, networked appliances, digital rights management, and performance engineering, including IEEE ICC, IEEE Globecom, IEEE ICME. Madjid has spoken widely on computer networks, security, multimedia and other areas of his research, having presented keynote speeches at conferences such as the Developments in IEEE eSystems Engineering Conference 2009, the International Conference on Multimedia Computing and Systems 2009, The International Arab Conference on Information Technology 2010, IEEE Wireless Days 2010, and IEEE ICCT 2011.