Multimedia Big Data: Challenges, Opportunities, and Applications

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Abstract

The pervasiveness of mobile devices & consumer electronics and the popularity of Internet & social networks have generated huge amounts of multimedia information in various media types (such as text, image, video, and audio) shared among a large number of people. This creates the opportunities and intensifies the interest of the research community in developing methods to address multimedia big data challenges for real-world applications. Providing solutions to multimedia data such as images and videos brings about a higher level of difficulty at attempting to understand their semantic meaning. In this talk, I will discuss the challenges and research opportunities in multimedia big data, and introduce a coherent framework for multimedia big data management and retrieval, ranging from multimedia data processing to indexing, query, retrieval, and presentation. A set of core techniques, such as multimedia big data analysis, content-based image/video retrieval, and multimedia data mining, will be discussed in details and demonstrated using a prototype system. In addition, I will present the idea of applying these techniques to practical applications such as TV shopping and disaster information management.

Biography

Dr. Shu-Ching Chen is an Eminent Scholar Chaired Professor in Computer Science in the School of Computing and Information Sciences (SCIS), Florida International University (FIU), Miami. He has been a Full Professor since August 2009 in SCIS at FIU. Prior to that, he was an Assistant/Associate Professor in SCIS at FIU from 1999. He received Master's degrees in Computer Science, Electrical Engineering, and Civil Engineering in 1992, 1995, and 1996, respectively, and the Ph.D. degree in Electrical and Computer Engineering in 1998, all from Purdue University, West Lafayette, IN, USA. He is the Director of Distributed Multimedia Information Systems Laboratory at SCIS. His main research interests include content-based image/video retrieval, distributed multimedia database management systems, multimedia data mining, and disaster information management. Dr. Chen has authored and coauthored more than 290 research papers and four books.

Dr. Chen was named a 2011 recipient of the ACM Distinguished Scientist Award. He received the best paper award from 2006 IEEE International Symposium on Multimedia. He was awarded the IEEE Systems, Man, and Cybernetics (SMC) Society's Outstanding Contribution Award in 2005 and was the co-recipient of the IEEE Most Active SMC Technical Committee Award in 2006. He was also awarded the Inaugural Excellence in Graduate Mentorship Award from FIU in 2006, the University Outstanding Faculty Research Award from FIU in 2004, the Excellence in Mentorship Award from SCIS in 2010, the Outstanding Faculty Service Award from SCIS in 2004 and 2014, and the Outstanding Faculty Research Award from SCIS in 2002 and 2012. He has been a General Chair and Program Chair for more than 50 conferences, symposiums, and workshops. He is the founding Editor-in-Chief of the International Journal of Multimedia Data Engineering and Management, and Associate Editor/Editorial Board of IEEE Multimedia, IEEE Trans. on Human-Machine Systems, and other 15 journals. He is the Chair of IEEE Computer Society Technical Committee on Multimedia Computing and Co-Chair of IEEE Systems, Man, and Cybernetics Society's Technical Committee on Knowledge Acquisition in Intelligent Systems. He was a member of three steering committees (including IEEE Transactions on Multimedia, 2011-2013). He also serves/served as a member of technical program committee for more than 320 professional meetings. He is a fellow of SIRI.