Thumbnail Selection: Delivering Digital Signage Contents to Mobile Phone

Gisung Kim, Soobin Lee, Joonyoung Park, Sungkwan Jung, Sangsik Kim, Yong-chul Shin

KAIST Institute

gskim@itc.kaist.ac.kr, soobinlee@itc.kaist.ac.kr, parkjay@itc.kaist.ac.kr, skjung@itc.kaist.ac.kr, sskim98@itc.kaist.ac.kr, ycshin@itc.kaist.ac.kr

Abstract— An access to digital signage displaying contents with a mobile phone has been in the limelight to improve advertising effects of the digital signage. There have been developed several methods to transfer digital signage contents to a mobile phone, but these methods are still lack of the cognitive convenience for users. In this paper, we design a novel method that enables users to easily access to digital signage contents with their mobile phone. In user's point of view, he just sees a content displayed in a digital signage, starts a mobile phone application, and selects a thumbnail from a list that is the same to what the signage displays. We developed a prototype to evaluate the proposed method. Conventional QR code recognition and photo recognition methods are compared to the proposed method and it is shown that the proposed method is superior to the conventional approaches in terms of time required to access to the detailed information and user preference.

Keyword— Digital Signage, Mobile Interaction, Linkage Method, RSSI, Thumbnail Selection

Gisung Kim received the B.S degree in industrial systems and information engineering from Korea University, Seoul, Korea, in 2006, and the M.S and Ph.D degree in industrial engineering from Korea Advanced Institute of Science and Technology (KAIST), Daejeon, in 2008 and 2012 respectively. Currently, he is a senior researcher in KAIST Institute for information technology convergence. His research areas of interests include rich user experience in large display system, intrusion detection system in broadband network, and resource management in wireless communication system.

Soobin Lee received the B.S, M.S and Ph.D degrees in electrical and electronic engineering from Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea, in 2003, 2005 and 2011 respectively. Currently, he is a research fellow (research assistant professor) in KAIST Institute for information technology convergence. His research areas of interests include web technologies, data mining, and human-computer interaction.

Joonyoung Park received the B.S degree in computer science and information technology management from Hanyang University, Seoul, Korea, in 2010, and the M.S degree in knowledge service engineering from Korea Advanced Institute of Science and Technology (KAIST), Daejeon, in 2012. Currently, he is a visiting researcher in KAIST Institute for information technology convergence. His research areas of interests include rich user experience in large display system, human computing interaction(HCI), and pervasive computing.

Sungkwan Jung received the B.S, M.S and Ph.D degrees in electrical and electronic engineering from Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea,in1999, 2001 and 2007 respectively. Currently, he is a research fellow (research associate professor) in KAIST Institute for information technology convergence. His research areas of interests include wireless sensor network technologies, the concept and networking technologies for Internet of Things/Web of Objects, and rich user experience in pervasive display/device system.

Sangsik Kim received the M. Eng. degree in computer engineering from the Chungnam National University, Daejeon, Korea, in 2006. He joined the future device team, information technology convergence research institute, Korea Advanced Institute of Scence and Technology (KAIST), where he develops future mobile devices. His research interests are in embedded sensors and sensor networking to support mobile users.

Yong-chul Shin received the B.S degree in industrial systems and information engineering from Korea University, Seoul, Korea, in 2010, and the M.S degree in industrial and systems engineering from Korea Advanced Institute of Science and Technology (KAIST), Daejeon, in 2012. Currently, he is a researcher in KAIST Institute for information technology convergence. His research areas of interests include user interaction/interface design in multi-device environment, cognitive engineering, and human factors engineering.