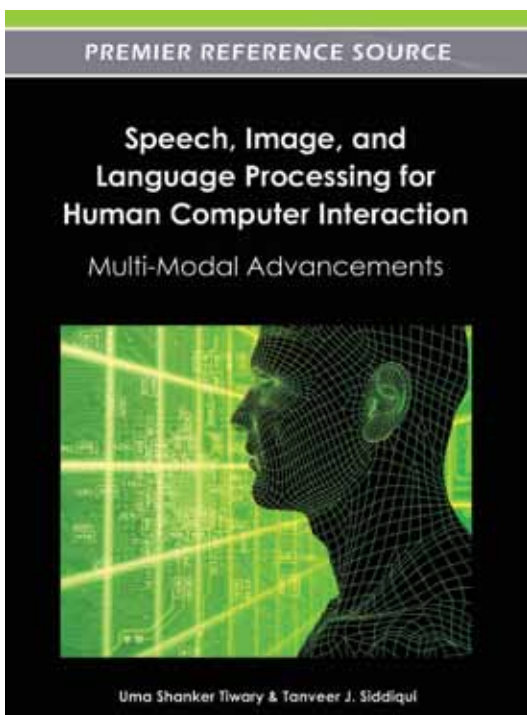


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## Speech, Image, and Language Processing for Human Computer Interaction: Multi-Modal Advancements



Uma Shanker Tiwary (Indian Institute of Information Technology Allahabad, India) & Tanveer J. Siddiqui (University of Allahabad, India)

Human Computer Interaction is the study of relationships among people and computers. As the digital world is getting multi-modal, the information space is getting more and more complex. In order to navigate this information space and to capture and apply this information to appropriate use, an effective interaction between human and computer is required. Such interactions are only possible if computers can understand and respond to important modalities of human interaction.

**Speech, Image, and Language Processing for Human Computer Interaction** aims to identify the emerging research areas in Human Computer Interaction and discusses the current state of the arts in these areas. This collection of knowledge includes the basic concepts and technologies in language, as well as future developments in this area. This volume will serve as a reference for researchers and students alike to broaden their knowledge of state-of-the-art HCI.

### Topics Covered:

- Affective interfaces
- Audio-visual and other mode based interaction
- Brain computer interface
- Capturing mental states for human machine interaction
- Cognitive models and architectures
- Interactive dialogs: analysis and generation
- Interactive visualization techniques
- Speech based interaction
- Visual interaction and Simulation of Virtual Environments

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**Uma Shanker Tiwary** is currently a professor at Indian Institute of Information Technology, Allahabad, India. He has completed his B. Tech. and Ph.D. in Electronics Engineering from Institute of Technology, B.H.U., Varanasi, India in 1983 and 1991. He has teaching and research experience of more than 23 years in the area of Computer Science and Information Technology with special interest in Computer Vision, Image Processing, Speech and Language Processing, Human Computer Interaction and Information Extraction and Retrieval. He has co-authored a book on 'Natural Language and Information Retrieval' (Oxford University Press, 2007) and has edited several Proceedings of the International Conferences on 'Intelligent Human Computer Interaction (Springer, 2009 and 2010)' and was publication Chair of 'Wireless Communication and Sensor Networks (IEEE Xplore, 2006, 2007 and 2008)'. His research work on the application of Wavelet Transform in Medical and Vision problems and Information Retrieval has been cited extensively. He was associated with the research work in the Mechatronics Dept. of Gwangju Institute of Science and Technology, Gwangju, South Korea and with "Anglabharti" project at Dept. of Computer Science and Engg. IIT Kanpur, India. He has delivered lectures, chaired many sessions at IEEE International Conferences and visited many labs in India and abroad, including U.S., South Korea, South Africa, China, Singapore, Thailand. He is the Fellow of IETE and Senior Member of IEEE.



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