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Shumin Zhai is a Principal Scientist at Google where he leads and directs research, design, and development of input methods and haptics systems. His research career has contributed to theoretical models and understandings of human-computer interaction as well as practical user interface designs and product innovations. He originated and led the SHARK/ShapeWriter project at IBM Research and a start-up company that pioneered the swiping word-gesture keyboard paradigm. His publications have won the ACM UIST Lasting Impact Award and a IEEE Computer Society Best Paper Award, among others. He served as the 4th Editor-in-Chief of ACM Transactions on Computer-Human Interaction, and frequently contributes to other editorial boards and program committees. He received his Ph.D. degree at the University of Toronto in 1995. In 2006, he was selected as one of ACM's inaugural class of Distinguished Scientists. In 2010 he was named Member of the CHI Academy and Fellow of the ACM.

The Human and Technology Factors in Smartphone Text Input

Billions of users communicate and search on their smartphones everyday through a modern software interface - the touchscreen keyboard. Developing smarter, more efficient, easy to learn, and fun to use keyboards has presented many fascinating human factors and machine intelligence research and design questions. Mr. Zhai will review and synthesize the progress and open research questions of the past 15 years in text input, focusing on those his colleagues and he have contributed through publications, including the cost–benefit equations of automation and prediction, the power of machine/statistical intelligence, the human performance models fundamental to the design of error-correction algorithms, spatial scaling effect in device sizes and the implications on human–machine labor division, and the challenges of evaluating the longitudinal effects of personalization and adaptation.

Through this research program review, he will illustrate why the combination of machine intelligence and human factors holds the future of human-computer interaction, and information technology at large.

Keywords:
Human-Machine Systems, Human-Computer Interaction, Human Performance, Text Input Methods, Touchscreen User Interfaces, Machine Intelligence, Technology Innovation.

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