

Call for chapter contributions to
The Handbook of Multimodal-Multisensor Interfaces
Edited by Sharon Oviatt, Bjoern Schuller, Phil Cohen & Daniel Sonntag
(with collaborating Area Editors)
Publisher *ACM Books/Morgan Claypool*, to appear 2017

Background: *The Handbook of Multimodal-Multisensor Interfaces* is intended to provide the first advanced handbook and authoritative resource on multimodal-multisensor interfaces at a time when this topic has become highly competitive commercially. Currently, there is no graduate textbook or comprehensive resource for professionals developing multimodal-multisensor interfaces for new smart phones, automotive systems, social robotics, and other applications. The handbook will include 50 chapters, many written by pioneers in the field of multimodal-multisensor interfaces. Topics will span cognitive science foundations and theory, human-centered design, prototyping and software tools, engineering techniques for multimodal signal processing, fusion and architectures, multimodal language and dialogue processing, commercialized systems, and emerging directions. In a section on “Multidisciplinary Synthesis and Challenge Topics,” experts will exchange different views on especially challenging topics in the field.

Intended readership: Advanced undergraduate and graduate students, professionals, corporate engineers, business strategists, technology funders, intelligent lay readers, and others.

Timeline: Initial chapter drafts will be due late February 2016, with handbook publication in spring 2017.

Author participation: Chapter authors will be participants in a state-of-the-art resource for graduate education and professionals in this rapidly growing field. They will influence future directions of research and training. All authors will receive a free copy of the published handbook.

Solicited content: Proposals are solicited on the above topics, with special interest in:

- Neurological foundations of multisensory-multimodal integration, including computational and statistical models
- Conceptual and design issues for interfaces that combine input modalities and passive sensors
- Multimodal-multisensor interfaces on mobile phones
- Multimodal-multisensor interfaces in vehicles
- Multimodal-multisensor virtual or augmented reality interfaces
- Wearable multimodal-multisensor interfaces embedded in glasses, watches, clothing, etc.
- Adaptive and anticipatory multimodal-multisensor interfaces, including prediction of user needs
- Multimodal-multisensor interfaces for activity tracking and health applications
- Deep learning techniques applied to multimodal-multisensor processing
- Multimodal-multisensor interfaces that combine recognition of input and generation of output
- Touch and haptic feedback in multimodal-multisensor interfaces
- Ethical, legal, and policy issues involving privacy protection on multimodal-multisensor interfaces
- Multimodal databases, prototyping and software tools, and evaluation methods
- Commercialization of multimodal-multisensor games and entertainment applications

Authors will be asked to summarize state-of-the-art work on their topic, identify important themes and research findings, critically analyze the field, and summarize important trends, social impact, and commercialization directions. Chapter contributions must be original content, written in clear prose appropriate for graduate students in computer science and engineering, and 8,000-10,000 words in length. Authors are encouraged to include concrete walk-through examples, digital resources with system demos, pointers to tools and databases, and relevant teaching materials.

Proposal instructions: Chapter proposals should:

- Include *first author's name, collaborating authors, affiliations (including email contact), tentative chapter title, and a paragraph describing planned chapter content*
- Be emailed by **Sunday Dec. 6th** to: Oviatt@incaadesigns.org

Proposals will be reviewed by the handbook's area editors for strength and fit within the collection of already committed chapters. Not all chapter proposals can be accepted. In most cases, area editors will contact the proposing author to further evaluate or negotiate the proposal's final content, scope, and fit.