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Nobuo Kawaguchi · Nobuhiko Nishio ·  
Daniel Roggen · Sozo Inoue ·  
Susanna Pirttikangas · Kristof Van Laerhoven  
Editors

# Human Activity Sensing

Corpus and Applications

 Springer

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# Preface

As part of current adaptive environments, recent technological advances have enabled the inclusion of miniature sensors (such as accelerometers or gyroscopes) on a variety of wearable and portable information devices. Most such devices utilize these sensors for simple orientation and gesture recognition only, but the recognition of more complex and subtle human behaviors from these sensors will in the future enable next-generation human-oriented computing in scenarios of high societal value (e.g., dementia care, fitness tracking, or work safety monitoring). This will require large-scale human activity corpora and much improved methods to recognize activities and the contexts in which they occur. This book deals with the challenges of designing reproducible experimental setups, running large-scale dataset collection campaigns, designing activity and context recognition methods that are robust and adaptive, and evaluating systems in the real world. Additionally, we reflect on the challenges and possible approaches to recognize situations, events, or activities outside of a statically predefined pool, which is the current state of the art, and instead adopt an open-ended view on activity and context awareness.

Following the success of five previous workshops held in conjunction with the ACM UbiComp/ISWC conferences, we have collected continuations from some of the best contributions to the past workshops as chapters in our book. This way, we share our current research on human activity corpus and their applications among the researchers and the practitioners.

We would last but not least like to thank all the contributors and workshop attendees of the past years for their valuable contributions and stimulating conversations.

Nagoya, Japan  
Shiga, Japan  
Brighton, UK  
Fukuoka, Japan  
Oulu, Finland  
Siegen, Germany

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Nobuhiko Nishio  
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