Contents

Well-Being Technology

Smart Assistive Technologies to Enhance Well-Being of Elderly People and Promote Inclusive Communities ................................................. 3
Rebeca I. García-Betances, María Fernanda Cabrera-Umpiérrez, Juan Bautista Montalvá Colomer, Miguel Páramo Castrillo, Javier Chamorro Mata, and María Teresa Arredondo

Mining User Experience Dimensions from Mental Illness Apps ............ 13
Jamil Hussain and Sungyoung Lee

Unobtrusive Technological Approach for Continuous Behavior Change Detection Toward Better Adaptation of Clinical Assessments and Interventions for Elderly People ......................................................... 21
Firas Kaddachi, Hamdi Aloulou, Bessam Abdulrazak, Philippe Fraisse, and Mounir Mokhtari

Biomedical and Health Informatics

Extracting Heartbeat Intervals Using Self-adaptive Method Based on Ballistocardiography(BCG) ............................................................... 37
Hongbo Ni, Mingjie He, Guoxing Xu, Yalong Song, and Xingshe Zhou

Novel Unobtrusive Approach for Sleep Monitoring Using Fiber Optics in an Ambient Assisted Living Platform ........................................ 48
Ibrahim Sadek, Joaquim Bellmunt, Martin Kodyš, Bessam Abdulrazak, and Mounir Mokhtari

Intent-Context Fusioning in Healthcare Dialogue-Based Systems Using JDL Model ................................................................. 61
Muhammad Asif Razzaq, Wajahat Ali Khan, and Sungyoung Lee

Unhealthy Dietary Behavior Based User Life-Log Monitoring for Wellness Services .............................................................. 73
Hafiz Syed Muhammad Bilal, Wajahat Ali Khan, and Sungyoung Lee

Activity and Recognition

Activity Recognition Enhancement Based on Ground-Truth: Introducing a New Method Including Accuracy and Granularity Metrics ........ 87
Hamdi Aloulou, Romain Endelin, Mounir Mokhtari, Bessam Abdulrazak, Firas Kaddachi, and Joaquim Bellmunt
Activity Model for Interactive Micro Context-Aware Well-Being Applications Based on ContextAA ................................. 99
  Victor Ponce and Bessam Abdulrazak

Ambient Assisted Robot Object Search .............................. 112
  Dennis Sprute, Aljoscha Pörtner, Robin Rasch, Sven Battermann,
  and Matthias König

Visual Confusion Recognition in Movement Patterns from Walking Path and Motion Energy ............................... 124
  Yan Zhang, Georg Layher, Steffen Walter, Viktor Kessler,
  and Heiko Neumann

High Fidelity Simulation and Visualization of Activities of Daily Living in Persim 3D ................................. 136
  Sirui Liu, Sumi Helal, and Jae Woong Lee

Independent Living Technology

Exploring Opportunistic Ambient Notifications in the Smart Home to Enhance Quality of Life ............................... 151
  Andreas Seiderer, Chi Tai Dang, and Elisabeth André

Proof of Concept Evaluation for an Intelligent Oven ............... 161
  Susan E. Reid, Bessam Abdulrazak, and Monica Alas

Life-Support System for Elderly as Assistance in Independent Living .................................................. 173
  Denis Žele, Nadja Jurančič, Ines Kožuh, and Matjaž Debevc

Smart Home Technology

Attribute-Based Encryption for Preserving Smart Home Data Privacy .................................................. 185
  Rasel Chowdhury, Hakima Ould-Slimane, Chamseddine Talhi,
  and Mohamed Cheriet

Generating Bayesian Network Structures for Self-diagnosis of Sensor Networks in the Context of Ambient Assisted Living for Aging Well .................................................. 198
  Camila Helena Souza Oliveira, Sylvain Giroux, Hubert Ngankam,
  and Hélène Pigot

AR-Alarm: An Adaptive and Robust Intrusion Detection System Leveraging CSI from Commodity Wi-Fi ................. 211
  Shengjie Li, Xiang Li, Kai Niu, Hao Wang, Yue Zhang,
  and Daqing Zhang
Short Contributions

Walking Pal: A Spatial and Context Aware System for the Visual Impaired ........................................ 227
   Hicham Elzabadani, Sara Eid, Lilan Haj Hussein, Bassel Hussain, and Adnan El Nasan

Integrating Prior Knowledge in Weighted SVM for Human Activity Recognition in Smart Home .................. 233
   M’hamed Bilal Abidine, Belkacem Fergani, and Anthony Fleury

Formal Test and Simulation Environment of Wireless Body Network ............................................. 240
   Khaldia Benahmed, Mostefa Belarbi, Abdelhamid Hariche, and Abou El Hassan Benyamina

Comparison of Machine Learning Algorithms to Increase Prediction Accuracy of COPD Domain .................. 247
   Lokman Saleh, Hamid Mcheick, Hicham Ajami, Hafedh Mili, and Joumana Dargham

Medical Semantic Question Answering Framework on RDF Data Cubes ............................................. 255
   Usman Akhtar, Jamil Hussain, and Sungyoung Lee

Author Index ................................................................. 261