AI in Eldercare: New Solutions to Old Problems

Papers from the AAAI Fall Symposium

Marge Skubic, Chair

Technical Report FS-08-02

AAAI Press
Menlo Park, California
Contents

Sit to Stand Detection and Analysis / 1
Sonya Allin, Alex Mihailidis

ETHEL: Toward a Principled Ethical Eldercare System / 4
Michael Anderson, Susan Leigh Anderson

A Framework for Individual Cognitive Performance Assessment in Real-time for Elderly Users / 12
Sandra H. Budde, Thomas Barkowsky

An AI Approach to Measuring Resident-on-Resident Physical Aggression In Nursing Homes / 15
Datong Chen, Howard Wactlar, Ashok Bharucha, Ming-ju Chen, Can Gao, Alex Hauptmann

A Cross-Cultural Evaluation of Domestic Assistive Robots / 24
Gabriella Cortellessa, Massimiliano Scopelliti, Lorenza Tiberio, Gion Koch Svedberg, Amy Loutfi, Federico Pecora

Towards an Intelligent Service to Elders Mobility Using the i-Walker / 32
U. Cortés, A. Martínez-Velasco, C. Barrué, E. X. Martín, F. Campana, R. Annicchiarico, C. Caltagirone

Resident and Caregiver: Handling Multiple People in a Smart Care Facility / 39
Aaron S. Crandall, Diane J. Cook

Towards a Multisensory-based Automation of Urinary Incontinence Behavioural Treatment / 48
Carsten Fischer, Dario Sancho-Pradel, Kerstin Schill

Automated Upper Extremity Rehabilitation for Stroke Patients Using a Partially Observable Markov Decision Process / 52
Patricia Kan, Jesse Hoey, Alex Mihailidis

Integrating Sensing and Cueing for More Effective Activity Reminders / 60
Joseph Modayil, Rich Levinson, Craig Harman, David Holper, Henry Kautz

Towards Provably Safe Control for Smart Wheelchairs / 67
Meeko Oishi, Nikolai Matni

Privacy-Preserving Recognition of Activities in Daily Living from Multi-view Silhouettes and RFID-based Training / 70
Sangho Park, Henry Kautz

A Fuzzy Logic System for Acoustic Fall Detection / 78
Mihail Popescu, Simon Coupland