

Index

A

abstract user interfaces 80, 82, 83, 84, 91
 Active Ageing Consortium in Asia Pacific (ACAP) 141, 144, 146, 154, 155
 active aging 141, 142, 143, 144, 145, 146, 150, 153, 154, 155, 156, 157
 activities of daily living (ADL) 95, 96, 189, 191, 291, 298
 ADLs, instrumental 95
 advanced practice nurse (APN) 273, 274
 affiliation 282, 288
 aged care 253, 254, 256, 257, 258, 259, 264, 265, 267, 268
 age-friendly communities 143, 144
 aging in place 65, 67, 68, 143, 163, 208, 232, 295, 296, 298
 aging population 31, 122, 269
 alarm pendants 46, 47
 ambient assisted living (AAL) 31, 32, 33, 38, 43, 44, 207, 208, 209, 214, 216, 218
 ambient assisted living (AAL) systems 30
 ambient intelligence 207, 208, 209, 216, 218
 ambulance dispatch 255
 American Geriatrics Society (AGS) 47, 48, 49, 57, 58
 Amigo project 209, 218
 analysis of variance (ANOVA) 231, 238, 239, 241, 242, 244, 252
 appointment booking 255
 artificial neural networks (ANN) 97
 artificial pets 189
 assisted living technologies 65
 assistive robotics technologies 96
 assistive services 209

assistive technology (AT) 1, 5, 9, 11, 12, 14, 15, 16, 19, 22, 23, 24, 25, 26, 34, 65, 66, 67, 68, 69, 71, 73, 75, 76, 77, 112, 114, 120, 188, 189, 190, 191, 193, 194, 195, 201, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 291, 293, 296, 299, 300, 301, 304

assistive technology (AT) intervention 220

assistive technology (AT) usage 188

attitude 238, 239, 252

Australia 1, 10, 11, 12, 15, 16, 17, 18, 19, 20, 23, 24, 25, 26, 27, 28, 29, 46, 61, 94, 95, 98, 105, 106, 107, 220, 222, 223, 224, 228, 253, 266, 267

Aware Home intelligent environments 208, 209, 210, 218

B

baby boomers 18, 19, 21, 94, 112
 backend applications 81, 88
 backend devices 80
 balance 47, 48, 51, 52, 53, 54, 56, 57, 58, 60, 63
 balance assessment 51
 Berg Balance Scale 51, 52, 58

C

care activity coordination 256
 chain affiliation 282, 288
 Chinese culture 295, 296, 297, 298, 302, 303
 chi-square analysis 252
 chronic care model (CCM) 255, 256, 265
 chronic illnesses 15, 16, 18, 19, 20, 21, 22, 26, 27, 28, 29, 95, 253, 254, 255, 257, 263, 264, 266, 267, 268, 270, 278

chronic illness management 253, 254, 257, 264
cognitive disabilities 81, 85, 89, 90, 92
cognitive engagement 115, 116, 117, 119, 121
cognitive impairment 272
cognitive orthotic systems 68
commercial bias 224, 226
community care 253, 256, 257
community of mutual care 207
community participation 34
complex devices 189
Confucian values 143
consumer health informatics 253, 254, 257, 261, 263, 267
COPLINTHO project 209, 218
cronbach's alpha 252
Cyber Family 141, 142, 156

D

decision support system (DSS) 256
dementia 65, 66, 67, 68, 69, 70, 72, 73, 74, 75, 76, 77, 78, 79, 115, 116, 119, 120, 121, 165, 180, 181, 184, 284, 291, 298, 300, 301, 302, 303, 304
dependent variable (DV) 252
digital aging 141, 154
digital family portrait device 234
digital literacy 141
disability 221, 222, 223, 224, 225, 228
discharge information systems 255
document-view design pattern 82
driving behaviour 163, 164, 165, 166, 169, 177, 186, 187
driving capacity interventions 161, 164, 165, 167, 168, 176, 177, 179

E

eBay 111, 114
elderly people 1, 5, 7, 8, 9, 11, 12, 13, 65, 207, 208, 209, 212, 213, 214, 215, 216, 217
e-learning 116
electric scooter robot arm (ESRA) 94, 98, 99, 100, 101, 102, 103, 104, 105
electric scooters 94, 97, 98, 104, 105, 106, 108
electronic door locking 301
electronic health records (EHR) 17
electronic patient records 255

e-mail 270, 272
embedded systems 1, 14
emotional connect 189
ePrescribing 255
European Union (EU) 30, 31, 32, 44, 66, 77, 231
evidence-based care 256
Experience and Application Research (E&AR)
design methodology 32
external environment 188, 189, 192, 195, 199

F

Facebook 111
factor analysis 238, 240, 252
falling 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64
falls detection 46, 48, 54
falls, explained 47
falls, extrinsic 47, 59
falls, injurious 46, 47, 57
falls, intrinsic 47, 59
falls, non-injurious 47
falls prevention 46, 55, 56, 57, 58, 64
falls, recurrent 47, 58, 60
falls risk 46, 47, 48, 55, 56, 57, 58, 59, 60
falls risk factors 47, 48, 53, 55, 56, 57, 58, 59, 60
falls, single 47
falls technology 46, 47, 57, 58
falls, unexplained 47
family caregivers 253, 254, 255, 257, 258, 259, 260, 263, 264, 267, 295, 296, 297, 298, 299, 300, 301, 302, 304
filial piety 143, 147, 155, 157, 295, 296, 297, 298, 299, 300, 302
Finland 46
floor vibration sensors 51
floor vibration sensors, acoustic sensing 51
floor vibration sensors, vibration sensing 51
Foresight Project on Mental Capital and Well-being 124
forgetfulness 34, 35
FRIEND robotic system 96, 106
frontend applications 81
Fukugotai (medical welfare facilities) 282, 288, 289, 290

G

- Gator-Tech Smart Home 67
 genetics 124
 gerontology 95, 123
 grey digital divide 15, 16, 17, 19, 20, 21, 22, 111, 112, 118, 119, 141, 144, 146, 147, 148, 149, 150, 154, 155, 156, 157, 158, 188, 201, 202, 204

H

- HAAT: activity component 225
 HAAT: assistive technology Components 225
 HAAT: human component 225
 health and fitness 34
 healthcare 15, 16, 17, 18, 19, 20, 21, 23, 26, 28, 29
 health care and welfare complex models 282, 290
 healthcare, new models of 1, 11, 12
 healthcare technology 17
 health consumers, information needs of 254, 260
 health information systems 253, 255
 health issues 1, 12
 health outcomes 1, 11, 12
 health professional consultative model 224, 225, 228
 Health Resources and Services Administration (HRSA) 270, 279
 health system benefits 1, 12
 health system costs 1, 12
 holistic assistive technology programs 226, 227
 hospital admission 255, 267
 Human, Activity and Assistive Technology (HAAT) program 225
 human-centered design process (ISO 9241-210) 32
 human-computer interfaces (HCI) 1, 12, 81

I

- i2home project 80, 83, 85, 87, 88, 90, 91, 92
 I-Living intelligent environments 208, 209

- improvement in memory with plasticity-based adaptive cognitive training (IMPACT) study 116, 121
 independent living 1, 2, 5, 9, 11, 15, 19, 24, 26, 65, 67, 68, 72, 73, 74, 75, 77
 independent variable (IV) 252
 information access issues 34
 information security 1, 14
 instrumental activities of daily living (IADL) 298

integrated delivery system (IDS) 290

intelligent technologies 231, 232

intelligent transportation systems (ITS) 160, 161, 164, 168, 169, 170, 171, 172, 173, 176, 177, 178, 179, 185, 186, 187

interesting things 125, 133

intergenerational activities 207

internal environment 188, 189, 192, 193, 195, 198, 199

Internet Navigator 141, 142, 150, 151

iPhones 111

Italy 231, 235, 246, 250

J

- Japan 282, 283, 285, 286, 287, 288, 289, 290, 292, 293, 294

K

- Kindle 111, 112
 Korea (Republic of Korea) 141, 142, 143, 144, 147, 148, 149, 150, 152, 153, 154, 155, 156, 157, 158, 282, 283, 286, 287, 288, 290, 292, 293

L

- learning abilities 68
 lifelong learning 125, 138
 LifeTec Queensland 220, 222, 225, 226, 228
 living assistance systems 208
 living assistive devices 208, 209, 210, 211, 212, 214
 local community 34
 long-term care insurance 282, 283, 284, 285, 286, 287, 288, 292
 long-term care insurance system 283, 284, 285, 286, 287

Long-Term Care Needed categories 284, 285
low-mileage bias 162, 183

M

MANUS robotic arm 96
mechatronic engineering technologies 95
Medical Automation Research Centre (MARC) 51
medication reminders 35
memory impairments 65, 66, 68, 69, 72, 73, 74, 75, 76, 77
mental engagement 124, 128
microcontrollers 2, 3
microprocessors 2
mild cognitive impairment (MCI) 165
mind active 125
Mini Mental State Examination (MMSE) 236
misprescription 223
mobility issues 34
model-view-controller (MVC) design approach 82
monitoring devices 301
motion detectors 209
motion sensors 301

N

National Institute for Clinical Excellence (NICE) 48, 56, 63
networked home environments 209, 218
Nintendo Wii 116
novel communications technologies 127
nursing homes 47, 231, 232, 233, 234, 235, 236, 237, 238, 240, 241, 243, 244, 245, 246, 249, 286, 292, 295, 296, 297, 298, 299, 300, 301, 302

O

older driver problem 161, 177
older drivers 159-187
open standards 1, 9, 12, 14
Ovid Medline database 269, 271

P

palliative care 256, 257, 258, 259
passive sensing alarms 48, 50

Pearl mobile robot assistant 234, 249
performance-orientated balance and mobility assessment (POMA) 51
pervasive computing. *See* ubiquitous computing
pervasive technology environments 209
physical engagement 116, 124, 125, 126, 128, 139
pluggable user interfaces 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91
positive ageing 143
preventative healthcare models 220
privacy 1, 3, 10, 14
ProFaNE Clinical Assessment Tool 48, 63
Pubmed database 269, 271

Q

quality of care provision 34
quality of life (QoL) 47, 188, 189, 223, 231, 232, 233, 234, 235, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 252, 274, 275, 277, 280, 281
quality of life (QoL) issues 1, 11
Queensland Smart Home Initiative (QSHI) 15, 16, 24, 25, 26

R

radio frequency identification (RFID) technology 208
randomised controlled trials (RCT) 269, 271, 272, 274, 276, 277, 278
reduced mobility 208
rehabilitation mechatronics 188
reminder devices 67
remote controls 81, 84, 86, 87
remote controls, universal 81
Research Institute of Science for the Better Living of the Elderly (RISBLE) 141, 142, 150, 151, 152, 153, 154, 155
residential care 256
risk assessment 46, 47, 48, 58, 59
road users 159, 160, 164, 168, 177, 178, 179
robotics 31, 94, 95, 96, 97, 98, 104, 105, 106, 107, 108, 109
robots 15, 16, 23, 27

S

safety and security issues 34, 35
 selection, optimisation and compensation (SOC) aging theory 114
 self-driving cars 160, 163
 self-efficacy 252
 sensitive technologies 188
 service access issues 34, 35, 39
 simple devices 189
 simulated presence (SP) 272, 273
 Singapore 188, 192, 197, 199, 200, 201, 204
 Skype 111
 smart homes 11, 14, 15, 16, 22
 smart inactivity monitor using array-based detectors (SIMBAD) fall detector 50
 social computing 208
 social connections 15, 207
 social engagement 47
 social isolation issues 34, 35
 social networking 112
 social networks 112, 114, 115, 116, 119, 120, 125, 126, 127, 128, 129, 133, 134
 social resources 207, 208, 211, 212, 216
 Solitaire 116
 SOPRANO (Service-oriented Programmable Smart Environments for Older Europeans) project 30, 31, 32, 33, 34, 35, 36, 38, 39, 40, 41, 42, 43, 44
 successful aging 122, 123, 125, 139, 143, 252
 Sudoku 116
 super ageing society 282
 supply chain management (SCM) 255

T

Taiwan 295, 296, 297, 298, 299, 300, 301, 302, 303, 304
 technology, adoption of 111
 telecare 15, 16, 21, 22, 23, 26
 telehealth 15, 16, 22, 23, 27
 telenursing 269, 270, 271, 272, 273, 276, 277, 278
 telephony 270
 1080 Family Online Game Festival 141, 142
 The Netherlands 65, 66, 77
 three-degree-of-freedom manipulator arms 94

Tiger Place Project 234

traffic network systems 164
 transport infrastructure 159, 160, 164, 168, 176, 177

U

U3A Online 122, 123, 128, 129, 130, 131, 132, 137, 138
 ubiquitous communications 3, 4, 5
 ubiquitous computing 1, 2, 3, 4, 5, 9, 12, 13, 14, 31
 ubiquitous computing, privacy issues 1, 3, 4, 5, 8, 10, 12
 ubiquitous computing, security issues 1, 3, 4, 5, 8, 10, 12
 United States of America (USA) 18, 19, 22, 26, 123, 126
 universal control hub architecture 80
 universal remote console framework 80
 University of the Third Age (U3A) adult education program 122, 123, 126, 127, 128, 129, 130, 131, 132, 134, 137, 138

Useful Field of View (UFOV®) test 166, 167, 168
 user centered design 80
 user interface management systems (UIMS) 82
 user interface model 81, 84, 85, 87, 91
 user interfaces 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93

V

vehicles 159, 160, 162, 163, 164, 165, 168, 169, 170, 171, 172, 173, 175, 176, 177, 178, 179, 180, 182, 183, 184, 185, 186
 videoconferencing 270, 272, 278
 video monitoring systems 50

W

wandering alarms 301
 wearable alarms 48
 Web-based applications 270
 Weiser, Mark 2, 14

X

Xerox PARC 2