

Index

A

AACS 359, 360, 362, 363, 367, 368
 AAC systems 264, 265, 266, 267, 269
 AAF devices 76, 78, 98, 100, 104, 105, 106, 107
 accelerometer sensors (ACC) 106
 Accessible Lifelong Learning (ALL) 193, 203, 291
 Accessible Rich Internet Applications (ARIA) 183, 189
 active motor threshold (AMT) 135, 137, 139, 143
 activities of daily living (ADL) 294, 299
 ADAPTA Foundation 287
 adaptive altered auditory feedback (A-AAF) 78, 102, 104, 105, 106
 adaptive evolutionary search 275
 aided communication 46, 47, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58
 ALARM-NET 256, 263
 alert portable telemedical MONitor (AMON) 341
 altered auditory feedback (AAF) 76, 78, 80, 85, 87, 88, 89, 95, 96, 97, 98, 99, 100, 102, 104, 105, 106, 107, 113, 118
 Alternative Expressive Communication System (SAC) 286
 Alternative input devices 10
 Alzheimer's disease (AD) 331
 Ambient Assisted Living (AAL) 40, 61, 74, 342
 AMI4Inclusion 191, 192, 194, 195, 201
 Ampère's Law 132
 amyotrophic lateral sclerosis (ALS) 23, 25, 33, 233, 249

approach-avoidance conflict 81, 82
 Artmedia virtual keyboard 8
 ASPACE Coruña 358, 359, 361, 362, 363, 364, 366, 367, 368, 369
 ASPACE (the Association of Parents of Persons with Cerebral Palsy) 289
 Assessment of Computer Task Performance 7
 Assistive Devices 4, 12
 Assistive Technologies 174
 Assistive Technology 2, 4, 5, 6, 11, 14, 369, 370
 assistive technology (AT) 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 310,
 Assistive Technology (AT) 49, 50, 58
 at rest motor threshold (RMT) 135, 136, 137, 138, 139, 143
 AT-SPI 207
 auditory evoked potentials (AEPs) 237
 Augmentative and Alternative Communication (AAC) 47, 50, 54, 57, 58, 264, 265, 266, 267, 269, 270, 282
 Augmented Reality 287
 Authoring Tool Accessibility Guidelines (ATAG) 184
 Autism Spectrum Disorders (ASD) 285, 287
 Avanza Plan 286, 287, 290
 AZAHAR 286

B

BADL 352, 353
 Bains Assistive Technology System (BATS) 304, 310,
 BAPI (Braille API) 214
 Barrier Walkthrough Method (BW) 179

behavior equivalence 205, 208, 209, 210, 211, 220
 Binaural Sonic Aid (Sonicguide) 62
 BIT project (Computer and Technology Bases) 290
 BOLD (blood oxygen level dependent) 19, 30, 235
 brain computer interface (BCI) 19, 20, 23, 24, 25, 26, 27, 29, 31, 32, 33, 34
 Brain-computer interface (BCI) technology 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 247, 248, 249, 250
 BTE (behind-the-ear) 99
 BVCL 213, 214, 215, 216, 217, 218

C

C-5 Laser Cane 62, 74
 CAFET (Computer Aided Fluency Establishment Trainer) 101
 CAN-BUS module 70
 CAN-BUS network 69, 71
 CareBot 43
 Care-O-Bot 43
 CCD cameras 62, 64
 CCD devices (Charge-Coupled Device) 320, 327
 CCK (Complementary Code Keying) 253
 CEAPAT 11, 13
 CEDETEL 290
 Center for Applied Special Technology's (CAST) 179
 central nervous system (CNS) 87
 central nucleus (CE) 90
 cerebral blood flow (CBF) 19
 CHS 341
 CIC (completely-in-the-canal) 99
 Circular coil 133
 CISVI 191, 192, 194, 201
 CITI Project (Intellectual Competence and Information Technologies) 290
 CMOS 328, 330
 CMRR 324, 325, 330
 COGNIRON robot 43
 Cognitive Walkthrough for the Web (CWW) 179

Coil companies 134
 common spatial patterns (CSP) 238
 communication devices 46, 48, 50, 51, 54, 56
 communication modes 47, 48, 57, 59
 COMPASS 7
 Computer-based systems 265
 conditioning stimulus (CS) 138, 143
 contingent negative variations (CNVs) 103
 continuous passive motion (CPM) machine 162, 163, 166, 167
 Control Centre 337, 338
 CSMA/CA 253

D

DABIN 215, 216, 218, 220
 Data Link layer 256
 Decalogue for Digital Inclusion 12
 Delayed Auditory Feedback (DAF) 78, 85, 86, 94, 96, 98, 99, 100, 102, 104, 105
 deoxygenated haemoglobin (deoxy-Hb) 19, 21
 Design for All 208, 216, 219, 220, 361, 367, 368
 Desktop keyboard 8
 device independency 208, 212
 DGPS 63
 Diafoot 341
 dialog model 209, 210, 217
 dielectric elastomer actuators (DEAs) 158
 Digital Divide 288
 Digital Signal Processor (DSP) 105
 Digraph probability 271
 dimensional trade-off 205, 208, 209, 220
 Dipartimento di Ingegneria Elettrica, Elettronica e dei Sistemi (DIEES) 60, 64, 68
 direct sequence spread spectrum signaling (DSSS) 253
 distinction sensitive learning vector quantization (DSLVQ) 239, 241
 Document Object Model (DOM) 175, 181, 182, 183, 189
 domain model 209, 210, 216
 Dorsolateral prefrontal cortex (DLPFC) 139, 143
 Double Cone Coil 133
 dual-in-line package (DIP) switch 228
 dual user interfaces 205, 207, 219, 220, 222

E

EARL 179, 183, 187
EDAD Project 289, 290
EEG analysis 102, 103
e-Inclusion 192, 193, 202, 203
EKG 341
electroactive polymers (EAPs) 156, 158
electrocorticogram, ECeG 234, 235, 244, 245
electroencephalogram (EEG) 19, 20, 21, 23,
24, 25, 26, 29, 31, 33, 34, 102, 103, 104,
105, 106, 109, 113, 123, 130, 225, 234,
235, 236, 237, 238, 240, 241, 242, 243,
244, 245, 246, 247, 248, 249, 250
electroencephalographic measurement 16, 17,
18, 28
electromyography (EMG) 89, 101, 102, 103,
104, 105, 106, 112, 144, 145, 149, 150,
151, 341, 344
EMERGE project 342
EMG analysis 102
EPROM 148
Ergonomic keyboard for two hands 9
ErrorProneness (EP) 273, 274, 278
ETAO Tool 7
EU4ALL 193
European Assistive Technology Information
Network (EASTIN) 11
Eurostat (European Statistic Agency) 37
Evaluware 7, 14
event-related desynchronization (ERD) 237,
238, 239, 241, 243, 244, 245, 250
event-related potentials (ERPs) 237, 238, 239,
241, 243, 245, 250
event-related synchronization (ERS) 237, 238,
250
evoked-potentials (EPs) 237
EXPLAN 79, 80, 86, 111
Eye controlled mouse 10

F

Ferroelectric arrays 22
Figure of eight coil 133
flash-onset visually evoked potentials (FVEPs)
24
Framework for BLind user INterface Develop-
ment (FBLIND) 213, 214, 220

freezing of gait (FOG) 120, 121, 122, 130
Frequency Altered Feedback (FAF) 78, 85, 86,
96, 97, 99, 100, 102, 104, 105
Functional Ambulation Category (FAC) 144,
149, 150, 151
functional electrical stimulation (FES) system
144, 145, 146, 147, 148, 149, 150, 152
functional magnetic resonance imaging (fMRI)
19, 23, 30, 85, 86, 87, 94, 111, 235, 250

G

GeroMessenger 340
Geropad® 344
GIS (Geographic Information Systems) 63
GNOME 207, 221
GOMS (acronym for Goals, Operators, Meth-
ods and Selection rules) 270, 277, 281
GPS systems (Global Positioning Systems) 63
Graphical User Interface (GUI) 243, 339
GSM 338, 341
GuideCane 62, 73

H

Hall Effect 316
Hal Screen Reader 207, 221
HARMONY 177
HAWK 207
HC-377M 226, 227
HCI principles 179
HCI usability 176
H-coil 134, 142
Head mouse 9
Health Body Area Network (HBAN) 257
hidden Markov Models (HMM) 239
HOMER 207, 222
HTML5 183, 184, 189
human-computer interface models 205, 206,
207, 209, 213, 214, 216, 220

I

IADL 352, 353
IMEDIR 349, 350, 351, 353
IMEDIR Group 289
IMSERSO 38
independent component analysis (ICA) 238

Industrial Scientific Medical (ISM) 252, 253, 263
 INE 311, 312
 inertial sensors 63, 64, 68
 INE (Spanish Statistic Agency) 38
 Infantile Cerebral Palsy (ICP) 358, 359, 360, 366, 367, 368, 370
 Information and Communication Technologies (ICT) 1, 3, 4, 5, 7, 11, 12, 15, 37, 39, 40, 41, 43, 44, 61, 191, 192, 193, 194, 195, 202, 203, 288, 289, 290, 291, 331, 332, 333, 335, 341, 343, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 357, 360, 361, 366, 367, 370
 information transfer rate (ITR) 24, 25, 234, 241
 infrared thermographic imaging 16
 infrared transmitting module 224, 225, 226, 228, 229, 231
 Institute for Integration in the Community (INICO) 7
 Institute of the Elderly and Social Services (IMSERSO) 4, 11, 13
 Intelligent actuators (IA) 104
 Intelligent Controller Units (ICU) 65
 intelligent headset (IHS) 104, 105, 106
 Intelligent sensors (IS) 104
 International Classification of Diseases, 9th revision, Clinical Modification (ICD-9-CM) 78
 International Classification of Functioning, Disability and Health (ICF) 3, 7, 14, 46, 49, 50, 55, 56, 57, 59
 Internet Explorer (IE) 182
 interstimulus interval (ISI) 138, 143
 In-TIC 346, 349, 351, 352, 353, 357, 358, 359, 360, 362, 365, 366, 367, 368, 369, 370
 IR sensors 64
 ISFET (Ion Sensitive Field Effect Transistor) 318
 ITC (in-the-canal) 99, 104, 105

J

JAWS 207, 221

K

KLM (acronym for Keystroke Level Model) 270, 277

L

lanthanum-nickel (LaNi5) 158, 168
 lateral nucleus (LA) 90
 LDR (light-dependent resistor) 319, 320
 learned behavior 81, 82, 90, 91, 92, 93
 LED1 (Light Emitting Diode) 228
 LEDs (light emitting diodes) 120, 130
 linear discriminant analysis (LDA) 241, 242
 linear variable differential transformer (LVDT) 312
 local discriminant bases (LDB) algorithm 103
 Logopedic 83
 low-rate wireless personal area networks (LR-WPAN) 252

M

magnesium-nickel (Mg2Ni) 158
 magnetoencephalography (MEG) 234, 235, 247
 Magneto-Resistive (M.R.) 147
 Masked Auditory Feedback (MAF) 78, 96, 98, 99, 100, 104
 Matching Persons with Technology (MPT) 6, 14, 304, 305, 306, 309, 310
 Median Raphe Nucleus (MRN) 90, 94
 Mental and psychiatric illnesses 312
 Metabolic and viral illnesses 312
 Metal hydride actuators (MH actuators) 155, 156, 159, 160, 161, 162, 163, 164, 165, 166, 167
 Metal hydride (MH) alloys 158, 159, 160, 165, 166, 170
 Microbolometers 22
 MIMO (multiple-input multiple-output) 253
 Model based evaluation techniques 269
 Montreal Cognitive Assessment (MOCA) 349, 351, 353, 354
 MOS 328
 MOSFET 318
 Motion-onset visually evoked potentials (MVEPs) 24, 27, 35

motor evoked potential (MEP) 135, 137, 138, 143

motor imagery (MI) 237, 241, 242, 243, 250

motor related potentials (MRPs) 237

motor threshold (MT) 135, 137, 143

Mouse emulator controlled by scanning 10

Mouse emulators using buttons 9

Mouth or lip-operated mouse 10

Movement time 271

Mowat Sensor 62

MPOWER project 342

N

Near-infrared spectroscopy (NIRS) 16, 17, 18, 19, 21, 22, 23, 26, 27, 28, 29, 30, 33, 235

NETCARITY 342

Network Layer 256

NOVA 177

NTC (Negative Temperature Coefficient) 318

NurseBot 43

O

OCAWA 180, 185

Off Screen Model 207

Orca 207, 221

organic hypotheses 80, 82, 83

orthogonal frequency division multiplexing

(OFDM) 253

oxygenated hemoglobin (oxy-Hb) 19, 21

P

Parkinson's disease 131, 132, 137, 140, 141, 142, 143

Patient Physiological Image (PPI) 105, 107

PECS (Picture Exchange Communication System) 285

pedunculopontine nucleus (PPN) 86, 90

Periaqueductal Gray (PAG) 90

Persistent Developmental Stuttering (PDS) 77, 78, 79, 80, 83, 84, 85, 86, 87, 88, 89, 91, 92, 93, 94, 95, 96, 97, 105, 118

Personal autonomy 16, 28

PERSONA project 342

Person Centred Planning (PCP) 287, 288

PFSP (Precision Fluency Shaping Program) 101

Photovoltaic arrays 22

Physical illnesses 312

Physical Layer 256

piezoelectric effect 313, 314, 317, 326

platform model 209, 212

PN junction 319, 320

Pocket Speech Lab (PSL) 99

position sensitive device (PSD) 327

positron emission tomography (PET) 85, 87,

110, 121, 123, 127, 128, 130

presentation model 209, 211, 214, 218

principal component analysis (PCA) 238

psychoanalysis 81

PTC (Positive Temperature Coefficient) 318

Pulse waveform 134

PYRUS system 60, 64

Q

QPSK 253

Quantum-well infrared photodetectors (QWIP) 22

R

Radio Frequency Identification (RFID) 195, 196, 199, 200, 203, 253, 254, 256, 257, 259, 260, 261, 262, 263, 292

range of motion (ROM) 163, 169

Recommender Systems 292

Remote Centre 338

Remote Monitoring of Diabetic Feet 341

Repetitive TMS (rTMS) 135, 136, 137, 138, 139, 140, 141, 143

Resource Description Framework (RDF) 179

RG model 270, 271, 277, 278

rhythmic auditory stimulation (RAS) 119, 120, 121, 123, 124, 126, 127, 130

RIBA (Robot for interactive Body Assistance) 343

RoboCare 43

ROBOTS@HOME 42

Royal National Institute for the Blind (RNIB) 177, 186, 188

RTD (Resistance Temperature Detector) 318

RTP 339

Russell Pathsounder 62

S

SAPI (Speech API) 213, 214, 221
 scanning keyboards 264, 265, 267, 268, 269, 270, 271, 272, 274, 277, 278, 279
 SCORM 198
 semantic loss avoidance 205, 208, 210, 211, 213, 220
 Sensory illnesses 312
 sensory rhythmic stimulation (SRS) 119, 123, 124, 127, 130
 sequential forward floating selection (SFFS) 239
 Sham Coil 134
 shape memory alloy (SMA) 156, 157
 Shape Memory Effect (SME) 157
 SHARE-IT 342
 SIAMO 327
 slow cortical potentials (SCP) 237
 somatosensory stimulation (SSS) 119, 120, 123, 127, 130
 SOPRANO project 342
 Spanish Law 39/2006 2
 Spatial Division Multiplexing (SDM) 253
 Speech and Braille Input and Output (SBIO) 213, 214, 215
 speech language professionals (SLPs) 77
 spinal cord injuries (SCI) 145, 153, 225, 229, 232
 Standard classification 4
 Standardized General Markup Language (SGML) 176, 190
 Statistical National Institute (INE) 311
 steady-state somatosensory EPs (SSSEP) 237
 Steady-state visually evoked potentials (SS-VEP) 19, 20, 21, 24, 25, 27, 28, 31, 32, 34, 35, 237, 247
 Student, Environment, Task and Tools (SETT) 6, 14
 Substantia Nigra compacta (SNc) 90, 91, 94
 Substantia Nigra reticulata (SNr) 90
 subthalamic nucleus (STN) 86
 superconducting quantum interference devices (SQUIDs) 235
 supplementary motor area (SMA) 87, 138, 139, 140, 143
 Supporting Independently Living Citizens

(SILC) 341

Survey on Disabilities, Deficiencies and Handicaps 38

Sustained Phonation Unit (SPU) 101

T

task adequacy 205, 208, 209, 220

task model 209, 216, 217

TEACCH Programme 285

Technology-Related Assistance for Individuals with Disabilities Act of 1988 2

Telecognitio® 340

Telegerontology® 331, 333, 335, 336, 337, 343, 344, 345

Tele-health technologies 41

test stimulus (TS) 138, 143

TIC-TAC 286

Touch screen 10

Trackball 10

Transcranial Magnetic Stimulation (TMS) 131, 132, 133, 134, 135, 136, 137, 138, 139, 141, 142, 143

Transport Layer 256

trilateration algorithm (TA) 71

U

Ultra Mobile Personal Computers (UMPC) 286

ultrasonic sensors 64

Ultra Wide Band (UWB) 341

Unified Guideline Languages (UGL) 179, 183

United Cerebral Palsy 18

Universal Declaration of Human Rights 3, 192, 203

U-R-Safe 341

User Agent Accessibility Guidelines (UAAG) 184

User Interface Management System (UIMS) 207, 222

User Interfaces for All 219, 220, 222, 223

user model 209, 213, 219, 223

V

Ventral Tegmental Area (VTA) 90, 91, 94

VICON system 149

virtual environment (VE) 242, 250
visual evoked potential (VEPs) 237
visually-evoked potentials (VEPs) 19, 21, 24,
 31
Visual search time 271
visual stimulation (VS) 119, 120, 122, 123,
 124, 127, 130
VOD 338
Voice analysis 102
VPN server 338

W

WAI 176, 177, 178, 180, 185
Warning&Services Algorithm (W&SA) 69, 71
WAVE 179
Web accessibility 172, 173, 174, 175, 176,
 177, 178, 179, 180, 182, 183, 184, 185,
 186, 187, 188
Web Content Accessibility Guidelines (WCAG)
 177, 178, 179, 180, 184, 190
Web user 172, 190
Window-Eyes 207, 221

wireless personal area network (WPAN) 104,
 105, 106, 252
Wisconsin Assistive Technology Initiative
 (WATI) 6, 14
WLAN 254, 258, 259, 260, 261, 263
words per minute (WPM) 266, 267, 268, 271,
 282
World Health Organization (WHO) 78, 79, 355
World-Wide-Web Consortium (W3C) 176, 183
World–Wide–Web (Web, WWW) 172, 173,
 174, 175, 176, 177, 178, 179, 180, 181,
 182, 183, 184, 185, 186, 187, 188, 189,
 190, 229

X

XHTML 175, 176, 178, 181, 183, 190
XML structures 179

Z

ZigBee 252, 253, 254, 256, 258, 259, 260, 261