

Index

A

absolute category rating (ACR) 253
 abstract-iconic 58
 acoustic diagrams 55
 acoustic media 54
 acted affective 118
 active learning 24
 adaptation 246, 251, 285, 290, 295
 adaptation algorithm 246, 290
 adaptation space 251
 adaptation technique 246
 adaptive content selection 296
 adaptive dimensionality reduction 24
 adaptive hypermedia architecture 211
 adaptive hypermedia environment 210
 adaptive hypermedia overview 290
 adaptive hypermedia system 291
 adaptive hypermedia technique 291
 adaptive information filter model 180
 adaptive media 206
 adaptive multimedia system 245
 adaptive navigation support 296
 adaptive presentation 296
 additive increase/additive decrease (AIAD)
 255

additive increase/multiplicative decrease
 (AIMD) 255, 260
 additive increase/proportional decrease
 (AIPD) 255
 affective computing 110, 116
 affective states 176
 affordances 134
 agent-based paradigm 285
 algorithmic remedy 34
 analysis of variance (ANOVA) 120
 apparatus 157
 application layer 269, 274
 appraisal analysis framework 126
 architecture 294
 Arena Project 275
 artificial intelligence (AI) 112, 285
 audible sound 113
 auditory information 152
 auditory timbre 152
 auditory-visual mapping 152

B

back-end layer 298
 bagging 35
 basic emotions 111

Bastard Project 275
 behavior 110, 289
 best effort service 189
 biased boundary 33
 biosensor 175, 181
 block-based image 14

C

camera parameters 36
 causal diagram 36
 centroid 26
 chance variables 36
 chrominance (Cb, Cr) plane 6
 class-boundary alignment 25
 co-training 31
 coarseness 156
 cognition 3, 133, 134, 170, 208, 212, 208
 cognitive architecture 208
 cognitive behavior 3
 cognitive diagnosis 212
 cognitive load 134, 208
 cognitive media types 51
 cognitive state 170
 cognitive style (CSA) 187, 195, 200
 cognitive theory of multimedia learning (CTML) 69, 73
 cognitively efficient adaptive multimedia 218
 cognitively relevant 51
 color 26
 colour masked signal to noise ratio (CMSNR) 89, 97
 communicating emotions 115
 compactness 154
 complexity 29, 156
 comprehensive user requirements 288
 compression performance 2
 computational models of attention 5
 computer-presented information 227
 concept complexity 29, 39
 concept-dependent active learning 39
 conceptual development 133, 137
 concrete-iconic 58
 ConExp 1.2 61
 configuration 49

connectivity 63
 conscientiousness 300
 consumers 188
 content 35, 36, 62, 82, 294, 296
 content alteration 296
 content description 294
 content fusion 35
 content presentation 296
 content provider 298
 content reconstruction 295
 content reform 294
 content selection 294
 content-level 82, 101
 context 36
 continuous media object 95
 continuous quality scale (CQS) 253
 contrast sensitivity function (CSF) 5
 core semantics 56, 60, 61
 Cronbach's alpha 141
 cycles per degree 4

D

data processing 35
 data storage 292
 decision variables 36
 Defense Advanced Research Projects Agency 176
 deformation 63
 degradation category rating 268
 degraded category rating (DCR) 253
 degree of dynamism 199
 design tool 273
 desktop video conferencing system (DVC) 94
 detection mechanism 96
 device/channel characteristic 297
 differential forms 56
 directional 3D sound 55
 disambiguate input-space (DS) 40
 disambiguate keywords (DK) 40
 discriminant 27
 distributed cognition 55
 domain knowledge 292
 dynamic partial function (DPF) 32
 dynamism 200

E

e-motional 110
 early vision 207
 Educational Modelling Language (EML) 71
 educational software 133
 electrocutaneous stimulators 84
 electrorheological devices 84
 embodied conversational agents (ECAs)
 112
 embodied knowledge 133, 134
 emergent properties 56
 emergent semantics 61
 emotion in recognition in computing (ERIC)
 project 117
 emotional multimedia 111
 emotional processing 300
 emotional recognition 110
 entry point 295
 equal average bit rate (EABR) 251
 expert-novice difference 206
 expertise reversal effect 209
 exploit 31
 explore 30
 extroversion 300

F

face detection 7
 facial action coding scheme (FACS) 115
 facial actions 116
 feature space 27
 feature structures 60
 feature-based multimedia semantics 47, 60
 feature-based taxonomy 66
 feature-structures 60
 FEELitPaddle.exe 139
 field dependence/independence 190
 field-independent learners 190
 filtering 296
 fire-alarm simulation 235
 first-step diagnostic method 213
 force feedback 133, 137
 force feedback mouse 139
 forced choice methodology 256
 formal concept analysis (FCA) 62
 formal context 61

frame-dropping filter 247
 frequency filter 247
 front-end layer 295
 full-reference quality metric 12

G

galvanic skin resistance (GSR) 98
 Game 118
 gaze 116
 generative 27
 geographical information systems (GIS) 56
 gestic media 54
 granularity 67, 156
 graph comprehension 73
 graphical content 47
 graphical design 49
 graphical media 53

H

hall monitor 10
 hand preference 225
 haptic 54, 83, 116, 132
 haptic feedback 132
 haptic interfaces 135
 haptic media 54
 Hasse-diagram 64
 highway 10
 hit-rate 39, 40
 holistic features 36
 holistic perceptual feature 26
 human factors 272
 human visual system (HVS) 2, 249
 human-computer interaction (HCI) 111
 hybrid rate control 247

I

iconic 59
 illustrations 48
 image annotation 21
 image schemata 55
 implementation considerations 298
 implicit 55
 independent component analysis (ICA) 32
 indexical 59
 individual differences 188

individual variables 114
 information visualisation 49
 infotainment 82, 189
 innovative technologies 110
 input space 27, 39
 INSPIRE 292
 instructional design 47, 48, 66, 71
 instructional management system (IMS) 71
 instructional multimedia design 47
 interaction monitoring module 292
 interactions between layers 273
 interactive control 53
 interactivity 53
 internal temporality 53
 interpretation 59
 isolation 39

J

Jitter 86
 JPEG 14
 just noticeable difference (JND) 252

K

keyword assisted concept-dependent
 active learning 39
 keyword isolation 39

L

labyrinths 234
 landmark queries 38
 landmark recognition 37
 lattice 61
 layer 295
 layout structure 50
 learner 292
 learner-adapted procedure 215
 learner's diagnostic module 292
 learner's model 292
 learning channel preference checklist
 (LCPC) 141
 learning object metadata (LOM) 66, 71
 learning style 138, 172
 left-handed 224
 lesson generation module 292

linguistic structure 50
 link personalization 293
 link-level manipulation 296
 local features 36, 38
 local perceptual features 26
 location 36, 38
 location-based 296
 logarithmically-sampled adaptation space
 252
 Logitech® 139
 long-term memory 208
 long-term working memory (LT-WM) 209
 low-knowledge user 206

M

macroblock 94
 magnetic resonance imaging (MRI) 112
 mathematics of perception 21
 maximizing expected generalization
 algorithm (MEGA) 28
 mean opinion score (MOS) 85, 257
 mean squared error (MSE) 2
 measuring affect 115
 measuring quality 255
 media 48, 82, 134
 media-level 84, 101
 mental workload 273
 methodology design 192
 middle layer 296
 mobile 286
 mobile Internet 286
 mobile multimedia-based service delivery
 channel 286
 mobile technologies 285
 mobile user 287
 mobility emergence 286
 modal learning preferences 145
 modal preferences 138
 modal variables 114
 modality 48
 moving object 5
 moving picture activity metric (MPAM) 89
 moving picture quality metric (MPQM) 89,
 96
 moving target fraction (MTF) 174, 180

MPEG 14
 mPERSONA system 293
 multi-channel 286
 multi-dimensional auditory information 152
 multimedia 47, 227, 250
 multimedia communication 48
 multimedia content 47, 60
 multimedia content description interfaces 57
 multimodal expressions 110
 multimodal human communication 113
 multimodality 48, 50
 multiplicative increase/multiplicative decrease 255
 Myers-Briggs type indicator (MBTI) 172

N

navigation structure 50
 nearest-neighbor sampling 30
 network 82
 network charts 61
 network diagram 61
 network layer 269, 274
 network-level 84, 101
 networked games 277
 neuroticism 300
 new user profiling 296
 noise factor 31
 non-verbal 110
 normalised video fidelity metric (NVFM) 89, 96
 null hypothesis 7

O

OAT discovery 252
 oats in practice 255
 object localization 63
 object repositories 72
 objective metrics 250
 “OCC” model 112
 olfactory 82
 optimal adaptation perception (OAP) 253
 optimal adaptation trajectory (OAT) 245, 250
 outdoor 36

P

pair comparison (PC) method 253
 participants 119
 PDA 286, 295
 peak signal to noise ratio (PSNR) 2, 11, 88, 249
 perceived difference 50
 perception of timbre 154
 perception-based approach 54
 perception-based image retrieval (PBIR) 23
 perceptual distortion metric (PDM) 12
 perceptual features 25
 perceptual logic 63
 perceptual quality metrics 2
 perceptual semantics 11
 perceptual studies 82, 102
 perceptual user requirements 297
 perceptual visibility predictor metric (PVP) 89
 perceptual-based visualization 152
 personal space 113
 personalization 284, 287, 290, 295
 physical interaction 133
 positive valence 121
 posture 116
 potential cognitive state 176
 presentation module 292
 pressure 83
 principal component analysis (PCA) 32
 properties inherited 56
 psychometric tools 172
 pure pictorial 49

Q

QoP 192
 QoP-IA 192
 quality measures 270
 quality model 85
 quality of perception (QoP) 188
 quality of service (QoS) 92, 98, 188, 268, 271
 quasi-bagging 25, 35
 query-concept learning 22, 28, 31, 34

R

rapid diagnostic method 212
 rapid verification method 216
 rate adaptive encoding 248
 rate control 247
 rate shaping 247
 re-quantization filter 248
 real-time paradigms 285
 real-time physiological monitoring 170
 real-time physiological sensors 174
 receiver-based rate control 247
 recursive subspace co-training 24
 regulation of emotions 301
 repetitiveness 156
 representamen 59
 representational forms 47, 48
 representational issues 51
 resource-layer 269
 responsive systems 116
 retrieval 21
 reusable learning asset (RLA) 72
 review of objective metrics 249
 rhetorical problem 48
 rhetorical structure 50
 RLAN 286
 rotating disks 84

S

saccades 3
 satellite 286
 scarcity 39
 scarcity of training data 26
 schematic organisation 49
 science education 134
 scientific visualisation community 49
 self control 301
 semantic annotation 22, 27, 34
 semantic model 2
 semantic multimedia content 297
 semantic ontology 36
 semantic pre-filtering 9
 semantic segmentation 6
 semantics of multimedia 56
 semiotic structure 50
 semiotic turn 56

semiotics 48, 56
 sender-based rate control 247
 sensorama 82
 sensory dissonance 155
 sentic mouse 116
 sharable content object reference model
 (SCORM) 71
 sharpness 154
 sight 84
 sign types 48, 54
 simple non-combined types 54
 simulation 133, 135
 single stimulus continuous quality
 evaluation (SSCQE) 98, 99, 257
 small-scale shape 83
 SMIL 2.0 66
 SMIL encoding 66
 SMIL specification language 66
 sonogram 153
 sound 84
 sound mosaics 167
 spatial complexity 251
 spatially coordinated layering 56
 Spearman-Brown prophecy formula 141
 spectral smoothness 155
 speech 54
 speech parameters 116
 speed of processing 300
 squaring 96
 State B - Input-space Disambiguation 41
 State C - Keyword Disambiguation 40
 State D - Keyword & Space Disambigua-
 tion 41
 statistical 155
 statistical approach 155
 statistical models 21
 statistical package for social sciences
 (SPSS) 120
 stimuli 157
 streaming video 267
 structural approach 155
 subjective level of enjoyment 193
 substance 57
 sunset 36
 support vector machine (SVM) 27
 SVM hyperplane 29

symbolic 58, 59, 61
 symbols 56, 62
 synchronisation error 95
 Synchronised Multimedia Integration
 Language (SMIL) 66
 synergistic context 35
 synesthesia 153

T

tables 61
 tactile 83, 133
 tactile display 83
 target clusters 178
 targets crossing paths 178
 task performance 273
 taxonomic information about the represen-
 tational forms 47
 taxonomies in graphic design 48
 taxonomies of media 48
 technical 82
 technical perspective 84, 85
 telephony 286
 temporal complexity 251
 temporal dimension of movement 54
 temporal distinctions 53
 temporal organisation 53
 temporal properties 53
 Teo-Heeger model 96
 text 48
 text-plus-picture format 191
 texture, shape 26
 theoretical background 189
 thermal displays 83
 three-layer model 268
 three-dimensional approach 299
 three-layer architecture 294
 timbre 153
 time 36
 time-based 296
 time-dependent media objects 95
 time-independent media objects 95
 told affective 118
 TOMUS model 59
 traditional user characteristics 297
 transductive learning 30
 two-class checker board setup 33

U

ultrasonic friction displays 84
 understanding of emotions 300
 unimodal 63
 usage layer 272
 usage layer 269
 user expertise 212
 user perceptual preference characteristics
 299
 user perspective 81, 84, 101
 user profile 36
 user profile management 294
 user profiling 289
 user requirements 288
 user-centred 110
 user-perceived quality 245

V

valence 120
 verbal and pictorial 49
 verbal/numerical 49
 verbalisers 191
 vibration 83
 video classification scheme (VCS) 89
 video code 2, 8, 9
 video quality adaptation 245
 video quality assessment 11
 video quality evaluation 245
 Video Quality Experts Group (VQEG) 250
 video quality metric (VQM) 249
 virtual 83, 224, 227, 230, 237, 238
 virtual environment 238
 virtual environment equipment 237
 virtual gallery 230
 virtual reality (VR) 83, 224, 227
 visual 3, 113, 300, 152, 167, 190, 191
 visual ability (VZ-2) 172
 visual and cognitive processing 300
 visual appearance 113
 visual attention 3
 visual attention processing 300
 visual positioning 113
 visual representations of sound 167
 visual texture 152
 visualiser/verbaliser 190

visualisers 191
voice 36

W

W4 286
WASD keys 230
Web-based multimedia content 284, 294
Web personalization 293
Web-based content delivery characteristics 286
Web-based multimedia personalization 296
Weber's law of just noticeable difference (JND) 252
weighted path of preference 253
wh labels 36
wh-semantics 36
WingMan® 139
WingMan® Force Feedback Mouse (WFFM) 139
Wizard of Oz (WOZ) approach 117
word-aliasing problem 24
working memory 203, 300