Index

A

abstraction 98, 117
access layer 196
activity 100
aggregation abstraction 104
Alignment Principle 248
analog/digital 178
animation 155
annotate story 115
annotation 92
annotation interface 127
architecture 47
audio 177
audio analysis 19
audio characterization 21
aural semantic units spatial attributes 128
automating video semantic acquisition 127
AVIS (Advanced Video Information System) 95

circles 110
classification abstraction 103
code variants 180
codec 113
coding scheme 253
cognition research 146
cognitive Architecture 147
cognitive determinants 243
Cognitive Load Theory 146, 148
collision resistant hash function 191
collusion-free watermarking 173
collusion-secure watermarking 185, 187
color 8
color feature vector extraction 80
color histogram 8
colour features 43, 59
common image collection 50
complement 42
completion problem effect 149
composite semantic unit 102
compound queries 109
compressed form 177
computer systems 174
computer usage 251
computer-aided analyzer 93
Confcntr 220
conference controller 219
conflict analysis 117
CONIVAS (CONtent-based Image and Video Access System) 27
constructivism 138
Content Based Image Retrieval (CBIR) 259
content classification 90
content delivery 2
content description 90
content extraction 7
content management 3

B

before-after comparison 53
behaviour of software 180
Boolean Matrix 271
bottom up 5
browse 242
bytecode 283

C

Camclnt 220, 224
camera control system 219
card-way 200
CBIR System 259
CDrom 163
CD-rom-based system 166

Camclnt 220, 224
content selection 212
color structure 15
content-based image retrieval system (CBIRS) 38, 39
content-based image search engine 39
content-based retrieval 73, 89, 90
context issues 137
contextual association 101
control file 167
conversions 178
copyright 173
copyright protection 173, 174
copyrighted multimedia documents 173
cryptographically strong pseudorandom bit generator 192
cryptography 174
curvature 44
CVOM (Common Video Object Model) 95
D
data acquisition 113
data analysis 113
data collection 48
data management 45
Database-Engine (DE) 198
decoration element 77
design by sketching 232
detail element 77
Devserv 220
digital archive 2
digital content 3
digital domain 179
digital environment 174
digital signature 180, 191
digital video 239
digital video content 239
digital video navigation 243
digital-domain watermarks 179
distance education 163
document structure-based indexing 77
duration 110
dynamic attributes 103
E
educational multimedia 136
educational multimedia theory 146
element interactivity 146, 153
elementary activity queries 108
elementary column operations 272
elementary event queries 108
elementary matrix 272
elementary object queries 108
elementary row operations 272
elementary semantic units 100
encoding 113
encryption algorithm 273
Entity-Relationship (ER) model 95
Entity-Type 196
event 101
experimental knowledge 40
explicit query support 240
extraction of watermark 180
F
feature vector 42
fingerprint 180
fingerprinting 173
fixed string 179
flow chart 236
formulate a browsing strategy 243
four-layer data model 261
Fourier descriptors 10
Fourier transform 178
fragile watermarks 177
frameproof coding 186
fuzzy c-mean (FCM) algorithm 78
G
GCL structure 74
generalization abstraction 104
goal formulation 212
goal-free effect 148
graph/hierarchical representation 23
graphical conceptual model 109
H
hardware implementation 280
HDM Interpreter 196
heterogeneity 93
high level features 44
high throughput multimedia 269
high-dimensional index 82
high-dimensional index structure 73
human cognitive architecture 146
human nature 90
human-computer interaction 46
hyperbase 196
hypermedia applications 195
hypermedia software 195

I

Ideal Externalisation Principle 248
image 177
image analysis 8
image content 40
image content-based indexing 78
image features 59
image grouping 52
image indexing engine 46
image representation 42
image search engine 46
imagination effect 151
implicit query support 240
index structures 73
information access 2
information content 211
information model 206
information processing 146
information selection 212
information structure 207
initial matrix generation 275
input data packets 21
insertion of watermark 180
instructional cognition research 146
instructional multimedia 146
intellectual property (IP) 173
intelligent multimedia 205
Intelligent Multimedia Systems (IMMPS) 205
intelligent presentation generation 211
inter-page linkage module 234
interactive multimedia educational programs 170
interactive video 164
interactivity 41
internal coding scheme 252, 255
Internet Multimedia Library (IML) 26
interpret 243
inverted file 45
invisible watermarks 176

J

Java Media Framework (JMF) 225
Java Runtime 287
Java Virtual Machine (JVM) 284
Java’s Abstract Window Toolkit (AWT) 225
JPEG 178
Just in Time (JIT) 284

K

key hierarchy 274
keyword index 80
keyword/topic-spotting 21
knowledge-based generation 204

L

large vocabulary automatic speech recognizer (LVASR) 27
lightning arrow 111
Limited Delays Principle 249
live video 113
Location Principle 248
lossy compression 178
low-level storage manager 80

M

master key matrix 274
matching 117
mean curvature 44
media content 1
media content management 4
media description 90
media objects 211
media realization 214
media selection 212
media set initialization 213
media set reduction steps 213
media warehousing 2
media weighting 213
Mel-frequency Cepstral coefficients (MFCC) 20
mel-frequency sub-band energy 20
Metaphor Principle 249
micon 241
modality effects 150
model 242
Model Maintenance Principle 248
moment invariants 10
mosaic and aggregate representations 24
mosaic images 24
motion detection 115
MPEG 178
MPEG-7 92
MRML (Multimedia Retrieval Markup Language) 39, 40
mStar 221
multi-pass approach 14
multimedia 39, 89, 137
multimedia application development 231
multimedia applications 231
multimedia competence 139
MultiMedia Conference Control program (MMCC) 221
multimedia content 1
multimedia copyright protection 173
multimedia data 269
multimedia didactical competencies 139
multimedia document 175
multimedia document retrieval system 73
multimedia documents 73, 173
multimedia in distance education 163
multimedia information retrieval 73
multimedia object 209
multimedia presentation generation 204
multimedia presentations 204
multimedia programs 163
multimedia retrieval 41
Multimedia Retrieval Markup Language 40
multimedia technology 89, 231
multimodal 6
multimodal instruction 146
multimodality 155
multiple intelligence 138
mutable instructions 190

O
object descriptions 19
object-based semantic models 99
observation slot 100
open classroom 141
operating system 289
opportunistic 243
OVID (Object-Oriented Video Information) 94

P
panoramic overview 24
perceptual content 91
perceptual determinants 243
performance measure 49, 53
phoneme level features 20
physical object 100
planned 243
point of ideal externalisation 245
porcelain element 77
precision 49
precision vs. recall 49
presentation model 208
Presentation-Engine (PE) 198
prior knowledge 146, 153
processor 289
project-based learning 141
prosodic features 20
pseudorandom string 180
public-key 269

Q
query language 107
query-by-example 41
query-by-example (QBE) paradigm 38
Query-By-Image-and-Video-Content (QBIC) 27

R
random string 180
rank 49
recall 49
redundancy effect 150
reference architecture 3
relational queries 109
relevance feedback 42, 60
relevance judgement 48
remote camera control system 222
remote module 180
replacement 42
repository 233
resolution 117
robust watermarks 176
rote vs. meaningful learning 151
run time engine 197

S
salient stills 242
scene change detection 13
scene detection 114
SCL structure 74
search algorithm 125
search paradigms 41
secret-key 269
security goals 187
security of multimedia data 269
segmentation 106
semantic activity 100
semantic content 90, 91
semantic content-based retrieval 89, 90
semantic heterogeneity 116
semantic model 93
semantic units 98, 99
semantic units spatial associations 128
Semantics Principle 248
session key matrix generation 274
shape 10
shape feature vector extraction 78
shot boundary detection 13
signal processing 114
signal processors 93
similarity measures 45
simulating user 52
single-valued measures 54
situated learning 138
sketching design pad 233
skims 25
SnakeCharmer 58
software 177
software environment 51
software fingerprinting 173
software fingerprints 190
software implementation 279
software watermarking 180
spatial and temporal zoomers 241
spatial association 101
spatial domain 179
spatial-domain watermarks 179
speaker identification 21
spell checking 256
split-attention effect 150
spread spectrum multimedia watermarking 187
spread spectrum watermarking 173
static attributes 103
steganography 174
story 102
stratification 106
structural association 101
structure index 81
structure- and content-based retrieval 73
structure-based retrieval 73, 74
subjective description 90
subtree model 74

T
tamperproof module 180
taxonomy 176
teacher competencies 136
technical description 90
temporal association 101
text retrieval 39
text retrieval (TR) community 38
Text Retrieval Conference 48
textual documents 177
textural features 43, 59
texture 9
time-constrained clustering 16
token 110
top down 5
Topology Principle 248
Traces Principle 248
trajectories 19
transform domain 178
transform-domain watermarks 179
TREC 48

U
unified retrieval 83
unimodal 6
user comparison 53
user interface 46, 84
user judgements 51
user navigation 248

V

variability effect 150
vertical bar 110, 111
VIDAM (VIDeo DAta Model) 96
video 89, 177
video abstraction 241
video acquisition 127
video analysis 12, 92
video browsers 239, 240
video browsing 239
video browsing strategy 247
video clip 12
video content 90, 109
video content-based retrieval 90
video document 89, 97
video documents internal structure 94
video identifier (VID) 100
video library 96
video location 289
video mosaics 241
video multimedia content 97
video performance 283
video representation 23
video retrieval 89
video retrieval systems 89
video retrieval user-friendly interface 128
video semantic acquisition 93, 112
video slider 244
video space icons 242
video structuring 99
videoconferencing 219
VideoText 96
view mapping 116
Viper 40, 57
VIRON (VIDeo Information Retrieval On Notation) 95
visible watermarks 176
visual feature extraction 8
visual layout 196
Visual-Way 200
VODM (VIDeo Object Description Model) 95

W

watermark 175
watermark extraction 183
watermark generation 183
watermark insertion 183
watermarking 173
watermarking scheme 183
watermarking strings 179
worked example effect 149
World Wide Web (WWW) 39

X

X-Tree 82