Index

**A**
abstract syntax 260–261
ActiveXQBE 378–381
Active XQuery 381–382
activity diagrams 331–333
  conditions 333
  description 332
  transitions 332
aesthetic computing 425–433
cultural level 425–426
implementation level 426
representation level 426
  steps
  assessment 428
graph 428, 429–430
  identification 428, 429
map 428, 430–431
ontology 428, 430
representation 428, 431–432
ambiguity
  analytical 120
gap 121
lexical 119, 124
management of 129–141
occlusion 121
query label 124
relationship 123
segmentation 121
structural 120
syntactic 120
target 119
analytical ambiguity 120
application-to-application (A2A)
  interaction 304
association rule
  semantics 262–263
syntax 262–263
AToM3 54, 81, 85
Bayesian networks 138
biochemical databases 407–421
  aMAZE 407–408, 410
networks 408–409
pathways 407–409
semantics 409
BioMaze
  project 409–410
body element 216
Brazilian Health System 159
cartography 389, 390–393, 396–398
clustering 251–254, 255–263
code
  generation 341–352
  GUI components 344–346
  mapping states 346–349
  non-terminal states 346
  terminal states 346–349
  mapping transitions 349–352
  techniques 329
user-interfaces diagrams
  342–344
collaborative environment
design 400
coloured Petri net (CPN) 94
communication semantics 64
community of users 455
conceptual model 148
conceptual programming language (CPL) 282
constrained compound graph
layout (C2GL) algorithm
  410–412, 418–420, 422
container types 412
phases 414–418
backbone extraction 416
container building 417
coordinate assignment 417–418
cycle management 415
root container building 416–417
constructivism 457
Corporate Digital Library (CDL) 8
CSCGL algorithm 409
**D**
data
flow
  diagrams 449–452
  mining 248, 249–250, 250, 254, 255, 264, 266–267, 266–269
  algorithms 247, 267
  association rules 250–251
  systems 266–267
to information (D2I) environment 268
database management system 142
defeasible logic 284
reasoning 274, 279–280
rules 285
theory 284
denotational semantics 452–453
diagrammatic language 22–50, 51–73
reasoning 23, 34
Index

VQL 145
digraphs 282–286
direct manipulation visual language (DMVL) 190
documentation 440, 444–449
domain specific visual language (DSVL) 75
double pushout (DPO) 78
DRREd
digraph module 291–296
E
efficient explanation 442
executable graphics 30
expressive power
of language 143
extended positional grammars (XPG) 103
textual query languages 359–361

F
final explanation 442
flowchart 56
formal explanation 442
functional data model 150
fuzzy logic 137

G
gap ambiguity 121
generic metamodelling tool 54
geo graphical pictorial query language (GeoPQL) 134
geographic information science (GIS) 154, 389, 393–396, 396–398
geo visualisation 389–403
grammar 24
relation-based 24
drawing algorithms 408
grammar 24, 76
transformation 74–101

H
heterogeneous biochemical graphs 408
heuristic search
algorithm A* 306
Best-First Search 306
Hill-Climbing 306
Hiroshima 1
host graph 75
human
computer interaction (HCI) 2, 123, 131, 389, 398–403
system 463
movement 205–231
hybrid language 57
VQL 147

I
iconic VQL 146
interaction visual languages 2
interactive systems 174–204
visual message 1–21
K
knowledge
discovery (KD) 247, 248–250
engineering environment (KEE) 281

L
lexical ambiguity 119, 124
linear
embedding 36
logic 33
logical model 148
logic formalism
visual and diagrammatic language 31

M
macro 383
Markov random field 138
markup languages 459
material explanation 442
mediation 135
metabolic pathways 408
metaqueries 249–250, 251
semantics 260–261
multi-view visual languages 74–101
manipulation 91

N
non-monotonic reasoning 279

O
occlusion ambiguity 121
ontologies 459
default inheritance 279
merging 280

P
physical model 148
pictorial language 14
pixelEx 398–399
planning
domain definition language (PDDL) 305–306, 309–311
process 303–305
systems
AltAlt 306
ASP/HSP 306
BLACKBOX 306
FF 306
GRAPHPLAN 306
LPG-TD planner 306
Macro FF 306
problem representation 308–310
Stanford Research Institute Planning System (STRIPS) 308
SATPLAN 306
SGPlan 306
YAHSP 306
plex language 56
programming language 14
Q

query 143
 -by-browsing (QBB) 150
 -by-example (QBE) 149
 body 146
 by example (QBE) paradigm 358
 by icon (QBI) 146
graph 152
 head 146
 label ambiguity 124
 language 142, 386
 mapping 143
 window 152

R

relational model 149
relationship ambiguity 123
repetition 135
repository model 78
representation
 model 410
resource description framework
(RDF) 275–277
 schema 277–278

S

segmentation ambiguity 121
semantic
 Web 273–293, 408
 and conflicting rules 279–280
definition 274
logic 278–280
ontologies 277
service
 composition 304–305
semantic manager 61
semantics
definition 61
semiotic
context 459, 460
system 461
semiotics 426
shape
 recognition
techniques 236–238
 stroke 233
 understanding
 issues 234–236
 system 232–242
 social determinism 456
 software development life cycle
 438–439
 source part 370
 spatio-temporal database 158–173
 specification
 languages 241–242
 Spectacle 281
 static semantics 75
 structural ambiguity 120
 symmetry of ignorance 177
 syntactic ambiguity 120
 syntactic manager 58
 syntax
definition 51–73
 system interpretation 182
T

tabular VQL 144
 target ambiguity 119
 temporal
 queries 169
 visual query environment
 (TVQE) 161
 theory of visual sentences 2
 thresholding 138
 transformation language 369
 triple graph grammars (TGGs) 78

U

UML
code generation 330
 elements 330
 unified modelling language
 (UML) 328–352
 universal description, discovery,
 and integration (UDDI)
 registry 308
 usability 457–465
 evaluation methods (UEMs) 403
 in interactive artefacts making
 458–460
 in social communication
 460–464
 use case diagrams 331
 actors concept 331

V

VDR-DEVICE
 system 286–296
 reasoning system 287–288
 rule editor 288–291
 VidaMine 254–267
 virtual window method 177
 VISIONARY 150
 VisiRule 280
 VISUAL 154
 visual
 automaton 55
 BioMaze (VBM) 410
 framework 410
 contextual attributed rewriting
 systems (vCARWs) 5
 data
 mining 254–267
 display terminals (VDTs) 458
 environment
 design 14
 interactive system 175
 interface 263–266
 language 1, 22–50, 51, 75, 174–204, 328
 ambiguities 118
 based on human movement
 209
 desk (VLDesk) 103, 114
 grammar 132
 metaphor 148
 modelling 328
 notation interpretation 117–128
 pattern 104
 programming environment 102
 programming languages (VPL)
 436–453
Index

Delphi 437
LabVIEW 438
Sketchpad 437
Smalltalk 437
PROLOG 443–449
query system 158–173
reasoning 220
sentences 1, 3
symbol type 104
tool for adaptive planning (VITAPlan) 305–322
design module 311–316
entity-relation model 312
operators 313–314
PDDL editor 316
problem representation 314–315
validity checks 315–316
plan representation 321–322
graph representation module 322
world simulation module 321–322
system configuration 316–321
highly adjustable planning (HAP) planner 317
module 318–320
transformation 7, 55

W
widget 11
WIN-PROLOG 280
World Wide Web Consortium (W3C) 358

X
XpLR methodology 110
XQuery By Example (XQBE) 357–385
as an update language 374–378
as constraint language 378–382
as query language 362–369
as transformation language 369–370
as trigger definition language 378–382
data model 383
guided composition facility 382–383
macro 383–385
editor 384–385
paradigm 361–362
queries 382–383
visual
data model 361–362
XQuery textual language 153, 358
XSLT textual language 358