

Index

Symbols

γ -Calculus ix, 1

A

absolute error (AE) 340
 agent-based auction trading 91
 agent-based framework for Semantic extensibility 121
 agents frame 71
 agent transactions, model for 93
 aggregation logic 370
 algorithm classification xii, 179
 algorithm validation 376
 AllTheWeb xi, 148
 analytic hierarchy process 368
 approximation spaces 183
 architecture description languages (ADLs) 18
 artificial agents, simplification due to 70
 artificial intelligence (AI) 29, 30
 artificial neural networks (ANN) 333, 335, 354
 artificial neural networks (ANNs) 302
 AskJeeves 149
 Association for Computing Machinery (ACM) 205
 Automated Bayesian Regularization 345
 automated tutoring systems (ITS) 66

B

Bayesian framework 344
 bi-directional hierarchical clustering 216
 bi-directional hierarchical clustering (BHC) system 219
 Blackboard 95
 business-to-business (B2B) 117
 business-to-customer (B2C) 47
 business application 43

C

causal function kernels (CFK) 303
 chemical reaction model (CRM) 1
 choice logic 370
 classifier, building the 188
 CLOVER platform 92
 cluster analysis 215
 clustering algorithm 216
 clusters, discovering the number of 225
 cognitive artificial agents 67
 color feature extraction 184
 communication capability 95
 communication controller 127
 communication controller (CC) agent 125
 constant factor, discovery of 224

content-based image classify and retrieval (CBICR) systems 180
cross-validation (CV) 354

D

databases, large xii, 179
data tampering 135
decision support systems (DSS) 28, 291
decision trees 31
degree of dependency 184
demand supply network (DSNnet) 369
demand supply network, definition 366
design layout (D) 51
dialog, in learning 69
dialogue strategy 78
disaggregated causal function kernel (dCFK) 304
document object model (DOM) 35
document type definition (DTD) 32, 44
domain knowledge 95
DSNnet 369
DSNnet, introduction and motivation 369
DSNnet analysis routine, main 375
Dynamic Programming (DP) 96
Dynamic Programming algorithm x, 91, 97, 99
Dynamic Programming formulation 95

E

e-procurement 91
electronic commerce (EC) 47
execution tampering 135
exponential smoothing (ES) 355
extended directory facilitator (EDF) 124
extensibility management agent (EMA) 125
extensible markup language (XML) 44

F

fault model 136
federated information system (FIS) xi, 116, 117
FIPA-compliant agent development platform xi, 116
first-order logic 71
functional roles (FR) 70
fuzzy inference system 52
fuzzy logic, in electronic commerce 51
fuzzy logic, justification of use to evaluate trust 53
fuzzy model, comparison with other models 58

G

Gamma, program synthesis for 3
Gamma programming paradigm 2

German Society for Computer Science (GI) 205
Google 149, 157

H

High Level Petri net 372
HotBot 149
HTML tags, relative weighting of 205
HTML tags, relevant information within 202
HTML tags, weighting of 202

I

IDSS, and decision trees 31
IKMDSA architecture 42
IKMDSA architecture, implementation of 39
image classification 180
image classification, rule-based system for 184
information modeling xiv, 273
information retrieval (IR) algorithms 199
information systems 183
InforSeek 149
intelligent agent 30
intelligent decision support systems (IDSS) 29, 30
intelligent decision support systems (IDSS), software agents and 30
intelligent knowledge-based decision support architecture (IKMDSA) 34
intelligent software agents, research on 66
interaction controller 127

K

knowledge-based decision support ix, 28
knowledge-based systems (KBS) 32, 34
knowledge agents 36
knowledge base (KB) 71
knowledge discovery techniques (KDT) 29
knowledge management (KM) 28, 43
knowledge management systems (KMS) 28
knowledge repositories (KR) ix, 28

L

learning, through communication 68
learning agents 35
electronic data interchange (EDI) 117
Lecture Notes in Informatics (LNI) 205
Levenberg-Marquardt training algorithm 344
linear model 58
link database (LK) 10
logical specification 4
logistics, definition 366

M

machine learning (ML) 333
 maintenance agent (MA) 10
 management information systems (MIS) 291
 MATLAB 191
 matrix pattern 236
 mean absolute errors (MAE) 350
 mean squared error (MSE) 344
 mean squared errors (MSE) 309
 message passing interface (MPI) 16
 Microsoft Search Engine (MSE) xi, 148
 MINCOST algorithm 317
 MINPATH algorithm 317
 mobile agent, security modeling and evaluation for 140
 mobile code paradigm 133
 mobile code paradigms, security concerns of 134
 mobile environment, description of 234
 mobile nodes, identification of 235
 model failures 137
 monitoring agent (MT) 9
 multi-agent system (MAS) 92
 multi-agent system, MPI implementation of the 16
 multi-agent systems (MAS) 1
 multi-agent systems, designing from logic specifications 8
 multi-agent systems, modeling by chemical reaction models 2
 multi-layer matrix 242
 multi-layer matrix, performance of 251
 multi layer perceptron (MLP) 302
 multi layer perceptrons (MLP) 308
 multiple linear regression (MLR) 354

N

N-gram models xv, 314
 NASA dataset 322
 neural networks 333
 Nokia business groups xvi, 366
 Nokia case study 378
 normalized absolute error (NAE) 340
 notification agent (NT) 9

O

object request brokerage (ORB) 117
 Ontologies 167
 ontology-based system xii, 165

P

PageRank algorithm 149, 157
 parameterised model 58
 personal agents (PAs) 122
 Petri Net 99
 Petri Net-based formalism xvi, 366
 Petri Net reachability analysis algorithm 375
 Petri net tools 367
 prediction model learning 318
 Problem of Universals xiv, 273
 program construction method ix, 1

R

radial basis function (RBF) 335
 RankPower, revised 154
 RDF schema (RDFS) 33
 reachability analysis routine, for a single customer node 376
 recurrent neural networks (RNN) 333, 334, 335
 resource description framework (RDF) 33
 reverse auctions 100
 ROSETTA 191
 rough set attribute reduction 187
 rough sets, new similarity measure in 190
 rough set theory xii, 179
 rough set theory, theoretical background 182
 rule generation 188
 rules base, construction of the 55

S

search engines, in Web mining 215
 security mechanisms 135
 semantic relatedness 168
 Semantic Web 215
 service-oriented architectures (SOAs) 117
 shortcut recommendation 319
 simple object access protocol (SOAP) 39
 single layer matrix 238
 single layer matrix, performance of 250
 single vs. multi-layer matrix 252
 size of the agent, influence of 141
 Socratic dialog x, 65
 student information agent (ST) 9
 student information database (DT) 10
 support vector machines (SVM) 333, 335
 similarity metric 171
 system architecture 13, 168
 system architecture, and implementation 85
 system evaluation 56

T

tendering 100
 term weights, computation of 202
 texture analysis matrix 184
 third case study (CS3) 56
 topic tree 10
 trust (T) 51
 trust, in electronic commerce 50
 trust modelling 50
 tutored learning 69, 75
 tutored learning situations, some features of 70
 two-tier supply chain x, 91, 93
 typographic information xii, 199
 typographic term weighting, approaches to 205

U

user agents 37

V

verification program, constructing the 5
 virtual enterprise (VE), paradigm 92
 virtual enterprise node (VEN) 92

W

Web crawlers 215
 Web interface 17
 Web mining 214, 227
 Web page, datasets for experiments 223
 Web page classification 215
 Web search engines, performance metrics for 149
 Web usage mining 316
 workflow nets 369
 World Wide Knowledge Base (Web-Kb) project 200
 World Wide Web Consortium (W3C) 44

X

XML, and decision trees for knowledge representation 33
 XML, and decision trees for knowledge representation and exchange 32, 33
 XML, and document type definitions (DTDs) 32

Y

Yahoo! xi, 148, 158