Index

Symbols

$\gamma$-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
intelligence 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

### 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
Index

**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