Index

A activities of daily living (ADLs) 244	refining the computation of 135 support and confidence of 129
Akaike information criterion (AIC) 248	C
a metric incremental clustering algorithm (AMICA)	
16	categorical data 14
Bayesian information criterion (BIC) 248	incremental clustering 14 dendrogram 18 features 18
bioinformatics 86–105	feature selection 18
biosequences 85–105 classifier function 90 conservation function 90	conflict of interests (COI) 170 correlation-based feature (CSF) 21 customer relationship management (CRM) 221
data structures 91	D
suffix trees 91 tries 91 formalization and approaches 92 e-neighbor pattern 100 extraction constraints 93 multi-period tandem repeats (MPTRs) 97 variable length tandem repeats (VLTRs) 97 future trends 101 pattern discovery problems 95 string, suffix, and don't care 90 blocks 128	data mining 1–31 decision trees 9 J48 technique 12 metric splitting criteria 9 metric methods 1–31 partitions, metrics, entropies 3 geometry 6 metric space 9 data visualization 106–123 classification 117
blocks 128	visualization methods 108
algorithms 131 complexity issues 134 generation for single measure values 132 processing interval-based blocks 132	VizRank 108 experimental analysis 112 projection ranking 110 deviance information criterion (DIC) 249

discretization 23 a metric approach 23	I
F	inductive logic programming (ILP) 182 instrumental activities of daily living (IADLs) 244
frequent itemset mining (FIM) 32 scalability tests 50 path bases (FPB) 40 pattern mining 32–56 constraints 33–35 anti-monotone 33–35 bi-directional pushing 35 monotone 33–35 fuzzy partitions 126 support definition 130	L leap algorithms 38 closed and maximal patterns 38 COFI-Leap 38 with constraints 41 COFI-trees 40 HFP-Leap 38 load distribution strategy 52 parallel BifoldLeap 44 sequential performance evaluation 47 impact of P() and Q() selectivity 50
G	M
geographical information systems (GIS) 227	machine learning (ML) 199 mining ontology 171
hierarchical Bayesian mixed-membership models (HBM-MMS) 241–275 characterization 245 dirichlet process prior 248 relationship with other data mining methods 247 strategies for model choice 248 the issue of model choice 242 two case studies 243 disability survey data (1982-2004) 244 PNAS biological sciences collection (1997-2001) 243 hyperclique patterns 57–84 all-confidence measure 59 definition 61 equivalence between all-confidence measure and H-confidence measure 62	XML documents 198–219 classification and clustering 208 document representation 209 by a set of paths 211 edge-centric approaches 204 feature selection 209 frequent tree discovery algorithms 204 frequent tree structure 202 modeling documents with Bayesian networks 213 stochastic generative model 212 tile-centric approach 205 tree-based complex data structure 200 Monte Carlo Markov chain (MCMC) 252 multidimensional databases 127
experimental results 72 for identifying protein functional modules 80	National Long Term Care Survey (NLTCS) 263
h-confidence 61 as a measure of association 66 cross-support property 63 for measuring the relationship among several objects	O on-line analytical processing (OLAP) 125
68 relationship with correlation 66	P
relationship with Jaccard 66 item clustering approach 72, 78	principal component analysis (PCA) 120 S
miner algorithm 69 detailed steps 69 scalability of 77 the pruning effect 74 effect of cross-support pruning 76 quality of 77	singular-value-decomposition (SVD) 229 social network analysis (SNA) 150, 165 applications 166 authoritativeness 165

Index

```
networking services (SNSs) 150
 network mining 149–175
   advanced mining methods 156
   co-occurence
     affiliation network 161
   co-occurrence 160
   from the Web 152
   keyword extraction 160
spatio-textual association rules 181-197
 document descriptions 183
 document management systems 177
 image analysis 177
 mining with SPADA 186
 reference objects (RO) 182
 task-relevant objects (TRO) 182
\mathbf{T}
toll-like receptors (TLR) 89
topic and cluster evolution 220-239
 evolving topics in clusters 222
   tasks of topic detection and tracking 222
   tracing changes in summaries 222
 for a stream of noisy documents 228
   application case (automotive industry) 228
 monitoring changes in cluster labels 223
 monitoring cluster evolution 225
   spatiotemporal clustering 226
 remembering and forgetting in a stream of documents
 topic evolution monitoring 230
 visualization of linked clusters 233
translation initiation sites (TIS) 89
```