

Index

- 2D and 3D mesh graphs, 39
- adjacency matrix, 5, 13
- Bellman–Ford, 26, 46
- bibliometric, 86
- bipartite clustering, 246
- bipartite graph, 150, 213
- block distribution, 17
- Brandes’ algorithm, 69
- breadth-first search, 32
- centrality, 255
 - betweenness, 257
 - closeness, 256
 - degree, 256
 - parallel, 258
 - stress, 257
- clustering, 237
- compressed sparse column (CSC), 305
- compressed sparse row (CSR), 305
- computer architecture, 356
- connected components, 20, 33
- connectivity, 149
- cyclic distribution, 17
- degree distribution, 141, 147
- dendrogram, 238
- densification, 142, 150
- detection, 355
- diameter, 141, 151, 219, 232
 - small, 141
- distributed arrays, 17
- dual-type vertices, 117
- dynamic programming, 23
- edge betweenness centrality, 78
- edge/vertex ratio, 243
- edges, 14
- effective diameter, 141, 151
- eigenvalues, 141, 148, 219, 233
- eigenvectors, 141, 148
- Erdős–Rényi graph, 39, 142
- explicit adjacency matrix, 209
- exponential random graphs, 143
- Floyd–Warshall, 53
- fundamental operations, 291
- genetic algorithm, 345
- graph, 13
 - graph clustering, 59
 - graph component, 163
 - graph contraction, 35
 - graph fitting, 181
 - graph libraries, 30
 - graph partitioning, 38
 - graph-matrix duality, 30
- hidden Markov model, 118
- HITS, 86
- hop plot, 141
- input/output (I/O) complexity, 288
- instance adjacency matrix, 211
- iso-parametric ratio, 219, 234

- Kronecker graphs, 120, 212
 - deterministic, 161
 - fast generation, 157
 - generation, 143
 - interpretation, 155
 - real, 161
 - stochastic, 152, 161
- Kronecker product, 144
 - other names, 147
- Lincoln Laboratory Mapping and Optimization Environment (LLMOE), 343
- Luby's algorithm, 35
- Markov clustering, 68
- MATLAB notation, 30
- matrix
 - Hadamard product, 16
 - Kronecker product, 16
 - multiplication, 16
- matrix addition, 291
- matrix exponentiation, 25
- matrix graph duality, 30
- matrix matrix multiply, 292
- matrix powers, 25
- matrix vector multiply, 291
- matrix visualization, 245
- maximal independent set, 35
- memory hierarchy, 290
- minimum paths, 26
- minimum spanning tree, 55
- monotype vertices, 116
- network growth, 245
- node correspondence, 143
- ontology, 354
- p^* model, 143
- PageRank, 86
- parallel
 - coarse grained, 262
 - fine grained, 262
- parallel mapping, 344
- parallel partitioning, 254
- path distributions, 118
- peer pressure, 59
- permutation, 220
- power law, 141
- preferential attachment, 142
- prim, 56
- probability of detection (PD), 124
- probability of false alarm (PFA), 124
- pseudoinverse, 90
- R-MAT graph, 39
- random access memory (RAM)
 - complexity, 289
- random graph, 39
- row-major ordered triples, 302
- row ordered triples, 298
- scaling, 356
- schema, 354
- scree plot, 141
- semiring, 14, 32
- shrinking diameter, 142
- SIAM publications, 91
- signal to noise (SNR) ratio, 124
- single source shortest path, 46
- small world, 141
- SNR
 - hierarchy, 128
- social sciences, 254
- sparse, 16
 - storage, 16
- sparse accumulator (SPA), 299
- sparse matrix
 - multiplication, 31
- sparse reference, 291
- sparsity, 220, 226
- spherical projection, 246
- stochastic adjacency matrix, 209
- tensor, 86, 87
 - factorization, 89
 - Frobenius norm, 88
 - Hadamard product, 88
 - Khatri–Rao product, 88
 - Kronecker product, 88
 - matricization, 88
 - outer product, 88

-
- time evolution, 355
 - tree
 - adjacency matrix, 117, 121
 - triangles, 141
 - unordered triples, 294
 - vertex betweenness centrality, 69
 - vertex interpolation, 243
 - vertex/edge schema, 117
 - vertices, 14