References

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Outline

References

References

References I

[1] L. Adamic, R. Lukose, A. Puniyani, and B. Huberman.
Search in power-law networks.
Phys. Rev. E, 64:046135, 2001. pdf (⊞)

[2] R. Albert, H. Jeong, and A.-L. Barabási.
Error and attack tolerance of complex networks.
Nature, 406:378–382, July 2000. pdf (⊞)

[3] P. W. Anderson.
More is different.
Science, 177(4047):393–396, August 1972. pdf (⊞)

[4] J. R. Banavar, F. Colaiori, A. Flammini, A. Maritan, and A. Rinaldo.
Topology of the fittest transportation network.
Phys. Rev. Lett., 84:4745–4748, 2000. pdf (⊞)

[5] J. R. Banavar, A. Maritan, and A. Rinaldo.
Size and form in efficient transportation networks.
Nature, 399:130–132, 1999. pdf (⊞)

[6] A.-L. Barabási and R. Albert.
Emergence of scaling in random networks.
Science, 286:509–511, 1999. pdf (⊞)

[7] F. Bass.
A new product growth model for consumer durables.
Manage. Sci., 15:215–227, 1969. pdf (⊞)

References II

[8] A. Bejan.

Shape and Structure, from Engineering to Nature.
Cambridge Univ. Press, Cambridge, UK, 2000.

[9] S. Bikhchandani, D. Hirshleifer, and I. Welch.

A theory of fads, fashion, custom, and cultural change as informational cascades.
J. Polit. Econ., 100:992–1026, 1992.

[10] S. Bikhchandani, D. Hirshleifer, and I. Welch.

Learning from the behavior of others: Conformity, fads, and informational cascades.
J. Econ. Perspect., 12(3):151–170, 1998. pdf (⊞)

[11] P. M. Blau and J. E. Schwartz.

Crosscutting Social Circles.
Academic Press, Orlando, FL, 1984.

[12] M. Boguñá and M. A. Serrano.

Generalized percolation in random directed networks.
Phys. Rev. E, 72:016106, 2005. pdf (⊞)

[13] S. Bohn and M. O. Magnasco.

Structure, scaling, and phase transition in the optimal transport network.
Phys. Rev. Lett., 98:088702, 2007. pdf (⊞)

[14] J. C. Bohorquez, S. Gourley, A. R. Dixon, M. Spagat, and N. F. Johnson.

Common ecology quantifies human insurgency.
Nature, 462:911–914, 2009. pdf (⊞)

References III

[15] J. Bollen, H. Van de Sompel, A. Hagberg, L. Bettencourt, R. Chute, M. A. Rodriguez, and B. Lyudmila.
Clickstream data yields high-resolution maps of science.
PLoS ONE, 4:e4803, 2009. pdf (⊞)

[16] S. Bornholdt and H. G. Schuster, editors.
Handbook of Graphs and Networks.
Wiley-VCH, Berlin, 2003.

[17] U. Brandes.
A faster algorithm for betweenness centrality.
J. Math. Sociol., 25:163–177, 2001. pdf (⊞)

[18] R. L. Breiger.
The duality of persons and groups.
Social Forces, 53(2):181–190, 1974. pdf (⊞)

[19] D. Brockmann, L. Hufnagel, and T. Geisel.
The scaling laws of human travel.
Nature, pages 462–465, 2006. pdf (⊞)

[20] J. T. Cacioppo, J. H. Fowler, and N. A. Christakis.
Alone in the crowd: The structure and spread of loneliness in a large social network.
Journal of Personality and Social Psychology, 97:977–991, 2009. pdf (⊞)

[21] A. Capocci, V. Servedio, G. Caldarelli, and F. Colaiori.
Detecting communities in large networks.
Physica A: Statistical Mechanics and its Applications, 352:669–676, 2005. pdf (⊞)

References IV

[22] J. Carlson and J. Doyle.

Highly optimized tolerance: A mechanism for power laws in design systems.
Phys. Rev. E, 60(2):1412–1427, 1999. pdf (⊞)

[23] J. Carlson and J. Doyle.

Highly optimized tolerance: Robustness and design in complex systems.
Phys. Rev. Lett., 84(11):2529–2532, 2000. pdf (⊞)

[24] E. Castronova.

Synthetic Worlds: The Business and Culture of Online Games.
University of Chicago Press, Chicago, IL, 2005.

[25] N. A. Christakis and J. H. Fowler.

The spread of obesity in a large social network over 32 years.
New England Journal of Medicine, 357:370–379, 2007. pdf (⊞)

[26] N. A. Christakis and J. H. Fowler.

The collective dynamics of smoking in a large social network.
New England Journal of Medicine, 358:2249–2258, 2008. pdf (⊞)

[27] A. Clauset, C. Moore, and M. E. J. Newman.

Structural inference of hierarchies in networks, 2006. pdf (⊞)

[28] A. Clauset, C. Moore, and M. E. J. Newman.

Hierarchical structure and the prediction of missing links in networks.
Nature, 453:98–101, 2008. pdf (⊞)

[29] A. Clauset, M. Young, and K. S. Gleditsch.

On the Frequency of Severe Terrorist Events.
Journal of Conflict Resolution, 51(1):58–87, 2007. pdf (⊞)

References V

[30] D. J. Daley and D. G. Kendall.
Epidemics and rumours.
Nature, 204:1118, 1964.

[31] D. J. Daley and D. G. Kendall.
Stochastic rumours.
J. Inst. Math. Appl., 1:42–55, 1965.

[32] H. de Vries, T. Becker, and B. Eckhardt.
Power law distribution of discharge in ideal networks.
Water Resources Research, 30(12):3541–3543, December 1994.

[33] P. S. Dodds.
Optimal form of branching supply and collection networks.
Phys. Rev. Lett., 104(4):048702, Jan 2010. pdf (⊞)

[34] P. S. Dodds, R. Muhamad, and D. J. Watts.
An experimental study of search in global social networks.
Science, 301:827–829, 2003. pdf (⊞)

[35] P. S. Dodds and D. H. Rothman.
Unified view of scaling laws for river networks.
Physical Review E, 59(5):4865–4877, 1999. pdf (⊞)

[36] P. S. Dodds and D. H. Rothman.
Geometry of river networks. I. Scaling, fluctuations, and deviations.
Physical Review E, 63(1):016115, 2001. pdf (⊞)

[37] P. S. Dodds and D. H. Rothman.
Geometry of river networks. II. Distributions of component size and number.
Physical Review E, 63(1):016116, 2001. pdf (⊞)

References VI

[38] P. S. Dodds and D. H. Rothman.
Geometry of river networks. III. Characterization of component connectivity.
Physical Review E, 63(1):016117, 2001. pdf (⊞)

[39] P. S. Dodds, D. H. Rothman, and J. S. Weitz.
Re-examination of the "3/4-law" of metabolism.
Journal of Theoretical Biology, 209(1):9–27, March 2001.
. pdf (⊞)

[40] P. S. Dodds and D. J. Watts.
Universal behavior in a generalized model of contagion.
Phys. Rev. Lett., 92:218701, 2004. pdf (⊞)

[41] P. S. Dodds and D. J. Watts.
A generalized model of social and biological contagion.
J. Theor. Biol., 232:587–604, 2005. pdf (⊞)

[42] S. N. Dorogovtsev and J. F. F. Mendes.
Evolution of Networks.
Oxford University Press, Oxford, UK, 2003.

[43] B. Efron and C. Stein.
The jackknife estimate of variance.
The Annals of Statistics, 9:586–596, 1981. pdf (⊞)

[44] R. Ferrer i Cancho and R. Solé.
The small world of human language.
Proc. R. Soc. Lond. B, 26:2261–2265, 2001. pdf (⊞)

References VII

[45] J. H. Fowler and N. A. Christakis.

Dynamic spread of happiness in a large social network: longitudinal analysis over 20 years in the Framingham Heart Study.

BMJ, 337:article #2338, 2008. pdf (⊞)

[46] M. T. Gastner and M. E. J. Newman.

Diffusion-based method for producing density-equalizing maps.

Proc. Natl. Acad. Sci., 101:7499–7504, 2004. pdf (⊞)

[47] M. T. Gastner and M. E. J. Newman.

Optimal design of spatial distribution networks.

Phys. Rev. E, 74:016117, 2006. pdf (⊞)

[48] M. T. Gastner and M. E. J. Newman.

Shape and efficiency in spatial distribution networks.

J. Stat. Mech.: Theor. & Exp., 1:P01015, 2006. pdf (⊞)

[49] M. Girvan and M. E. J. Newman.

Community structure in social and biological networks.

Proc. Natl. Acad. Sci., 99:7821–7826, 2002. pdf (⊞)

[50] M. Gladwell.

The Tipping Point.

Little, Brown and Company, New York, 2000.

[51] J. P. Gleeson.

Cascades on correlated and modular random networks.

Phys. Rev. E, 77:046117, 2008. pdf (⊞)

References VIII

[52] J. P. Gleeson and D. J. Cahalane.
Seed size strongly affects cascades on random networks.
Phys. Rev. E, 75:056103, 2007. pdf (⊞)

[53] W. Goffman and V. A. Newill.
Generalization of epidemic theory: An application to the transmission of ideas.
Nature, 204:225–228, 1964.

[54] N. Goldenfeld.
Lectures on Phase Transitions and the Renormalization Group, volume 85 of *Frontiers in Physics*.
Addison-Wesley, Reading, Massachusetts, 1992.

[55] M. C. González, C. A. Hidalgo, and A.-L. Barabási.
Understanding individual human mobility patterns.
Nature, 453:779–782, 2008. pdf (⊞)

[56] M. Granovetter.
Threshold models of collective behavior.
Am. J. Sociol., 83(6):1420–1443, 1978. pdf (⊞)

[57] S. M. Gusein-Zade.
Bunge's problem in central place theory and its generalizations.
Geogr. Anal., 14:246–252, 1982.

[58] J. T. Hack.
Studies of longitudinal stream profiles in Virginia and Maryland.
United States Geological Survey Professional Paper, 294-B:45–97, 1957.

[59] A. Halevy, P. Norvig, and F. Pereira.
The unreasonable effectiveness of data.
IEEE Intelligent Systems, 24:8–12, 2009. pdf (⊞)

References IX

[60] C. A. Hidalgo, B. Klinger, A.-L. Barabási, and R. Hausman.
The product space conditions the development of nations.
Science, 317:482–487, 2007. pdf (⊞)

[61] R. E. Horton.
Erosional development of streams and their drainage basins; hydrophysical approach to quatitative morphology.
Bulletin of the Geological Society of America, 56(3):275–370, 1945.

[62] N. F. Johnson, M. Spagat, J. A. Restrepo, O. Becerra, J. C. Bohorquez, N. Suarez, E. M. Restrepo, and R. Zarama.
Universal patterns underlying ongoing wars and terrorism, 2006. pdf (⊞)

[63] S. Kauffman.
The Origins of Order.
Oxford, 1993.

[64] M. Kearns, S. Suri, and N. Montfort.
An experimental study of the coloring problem on human subject networks.
Science, 313:824–827, 2006. pdf (⊞)

[65] C. Kemp and J. B. Tenenbaum.
The discovery of structural form.
Proc. Natl. Acad. Sci., 105:10687–10692, 2008. pdf (⊞)

[66] W. O. Kermack and A. G. McKendrick.
A contribution to the mathematical theory of epidemics.
Proc. R. Soc. Lond. A, 115:700–721, 1927. pdf (⊞)

References X

[67] W. O. Kermack and A. G. McKendrick.

A contribution to the mathematical theory of epidemics. III. Further studies of the problem of endemicity.

Proc. R. Soc. Lond. A, 141(843):94–122, 1927. pdf (⊞)

[68] W. O. Kermack and A. G. McKendrick.

Contributions to the mathematical theory of epidemics. II. The problem of endemicity.

Proc. R. Soc. Lond. A, 138(834):55–83, 1927. pdf (⊞)

[69] J. W. Kirchner.

Statistical inevitability of Horton's laws and the apparent randomness of stream channel networks.

Geology, 21:591–594, July 1993.

[70] M. Kleiber.

The Fire of Life. An Introduction to Animal Energetics.

Wiley, New York, 1961.

[71] J. Kleinberg.

Navigation in a small world.

Nature, 406:845, 2000. pdf (⊞)

[72] J. M. Kleinberg.

Authoritative sources in a hyperlinked environment.

Proc. 9th ACM-SIAM Symposium on Discrete Algorithms, 1998. pdf (⊞)

[73] P. L. Krapivsky and S. Redner.

Organization of growing random networks.

Phys. Rev. E, 63:066123, 2001. pdf (⊞)

References XI

[74] M. Kretzschmar and M. Morris.
Measures of concurrency in networks and the spread of infectious disease.
Math. Biosci., 133:165–95, 1996. pdf (⊞)

[75] L. B. Leopold.
A View of the River.
Harvard University Press, Cambridge, MA, 1994.

[76] K. Y. Lin.
An elementary proof of the perron-frobenius theorem for non-negative symmetric matrices.
Chinese Journal of Physics, 15:283–285, 1977. pdf (⊞)

[77] A. J. Lotka.
The frequency distribution of scientific productivity.
Journal of the Washington Academy of Science, 16:317–323, 1926.

[78] B. B. Mandelbrot.
An informational theory of the statistical structure of languages.
In W. Jackson, editor, *Communication Theory*, pages 486–502. Butterworth, Woburn, MA, 1953.

[79] A. Maritan, F. Colaiori, A. Flammini, M. Cieplak, and J. R. Banavar.
Universality classes of optimal channel networks.
Science, 272:984–986, 1996. pdf (⊞)

[80] K. A. McCulloh, J. S. Sperry, and F. R. Adler.
Water transport in plants obeys Murray's law.
Nature, 421:939–942, 2003. pdf (⊞)

[81] K. A. McCulloh, J. S. Sperry, and F. R. Adler.
Murray's law and the hydraulic vs mechanical functioning of wood.
Functional Ecology, 18:931–938, 2004. pdf (⊞)

References XII

[82] R. Milo, N. Kashtan, S. Itzkovitz, M. E. J. Newman, and U. Alon.
On the uniform generation of random graphs with prescribed degree sequences, 2003. pdf (⊞)

[83] C. D. Murray.
The physiological principle of minimum work applied to the angle of branching of arteries.
J. Gen. Physiol., 9(9):835–841, 1926. pdf (⊞)

[84] C. D. Murray.
The physiological principle of minimum work. I. The vascular system and the cost of blood volume.
Proc. Natl. Acad. Sci., 12:207–214, 1926. pdf (⊞)

[85] C. D. Murray.
A relationship between circumference and weight in trees and its bearing on branching angles.
J. Gen. Physiol., 10:725–729, 1927. pdf (⊞)

[86] J. D. Murray.
Mathematical Biology.
Springer, New York, Third edition, 2002.

[87] M. Newman.
Assortative mixing in networks.
Phys. Rev. Lett., 89:208701, 2002. pdf (⊞)

[88] M. E. J. Newman.
Scientific collaboration networks. II. Shortest paths, weighted networks, and centrality.
Phys. Rev. E, 64(1):016132, 2001. pdf (⊞)

[89] M. E. J. Newman.
Mixing patterns in networks.
Phys. Rev. E, 67:026126, 2003. pdf (⊞)

References XIII

[90] M. E. J. Newman.

The structure and function of complex networks.
SIAM Review, 45(2):167–256, 2003. pdf (⊞)

[91] M. E. J. Newman.

Erratum: Scientific collaboration networks. II. Shortest paths, weighted networks, and centrality [Phys. Rev. E 64, 016132 (2001)].
Phys. Rev. E, 73:039906(E), 2006. pdf (⊞)

[92] M. E. J. Newman and M. Girvan.

Finding and evaluating community structure in networks.
Phys. Rev. E, 69(2):026113, 2004. pdf (⊞)

[93] F. Ninio.

A simple proof of the Perron-Frobenius theorem for positive symmetric matrices.
J. Phys. A.: Math. Gen., 9:1281–1282, 1976. pdf (⊞)

[94] M. A. Nowak.

Five rules for the evolution of cooperation.
Science, 314:1560–1563, 2006. pdf (⊞)

[95] S. D. Peckham.

New results for self-similar trees with applications to river networks.
Water Resources Research, 31(4):1023–1029, April 1995.

[96] D. J. d. S. Price.

Networks of scientific papers.
Science, 149:510–515, 1965. pdf (⊞)

References XIV

[97] D. J. d. S. Price.

A general theory of bibliometric and other cumulative advantage processes.
J. Amer. Soc. Inform. Sci., 27:292–306, 1976.

[98] I. Rodríguez-Iturbe and A. Rinaldo.

Fractal River Basins: Chance and Self-Organization.
Cambridge University Press, Cambrigde, UK, 1997.

[99] M. Sales-Pardo, R. Guimerà, A. A. Moreira, and L. A. N. Amaral.

Extracting the hierarchical organization of complex systems.
Proc. Natl. Acad. Sci., 104:15224–15229, 2007. pdf (⊞)

[100] M. Sales-Pardo, R. Guimerà, A. A. Moreira, and L. A. N. Amaral.

Extracting the hierarchical organization of complex systems: Correction.
Proc. Natl. Acad. Sci., 104:18874, 2007. pdf (⊞)

[101] A. E. Scheidegger.

A stochastic model for drainage patterns into an intramontane trench.
Bull. Int. Assoc. Sci. Hydrol., 12(1):15–20, 1967.

[102] A. E. Scheidegger.

Theoretical Geomorphology.
Springer-Verlag, New York, third edition, 1991.

[103] T. Schelling.

Dynamic models of segregation.
J. Math. Sociol., 1:143–186, 1971.

References XV

[104] T. C. Schelling.

Hockey helmets, concealed weapons, and daylight saving: A study of binary choices with externalities.
J. Conflict Resolut., 17:381–428, 1973. pdf (⊞)

[105] T. C. Schelling.

Micromotives and Macrobehavior.
Norton, New York, 1978.

[106] S. A. Schumm.

Evolution of drainage systems and slopes in badlands at Perth Amboy, New Jersey.
Bulletin of the Geological Society of America, 67:597–646, May 1956.

[107] Y. Sheffi.

Urban Transportation Networks: Equilibrium Analysis with Mathematical Programming Methods.
Prentice-Hall, Englewood Cliffs, New Jersey, 1985. pdf (⊞)

[108] S. S. Shen-Orr, R. Milo, S. Mangan, and U. Alon.

Network motifs in the transcriptional regulation network of *Escherichia coli*.
Nature Genetics, pages 64–68, 2002. pdf (⊞)

[109] R. L. Shreve.

Infinite topologically random channel networks.
Journal of Geology, 75:178–186, 1967.

[110] G. Simmel.

The number of members as determining the sociological form of the group. I.
American Journal of Sociology, 8:1–46, 1902.

References XVI

[111] H. A. Simon.
On a class of skew distribution functions.
Biometrika, 42:425–440, 1955. pdf (⊞)

[112] C. Song, S. Havlin, and H. A. Makse.
Self-similarity of complex networks.
Nature, 433:392–395, 2005. pdf (⊞)

[113] C. Song, S. Havlin, and H. A. Makse.
Origins of fractality in the growth of complex networks.
Nature Physics, 2:275–281, 2006. pdf (⊞)

[114] D. Sornette.
Critical Phenomena in Natural Sciences.
Springer-Verlag, Berlin, 2nd edition, 2003.

[115] W. R. Stahl.
Scaling of respiratory variables in mammals.
Journal of Applied Physiology, 22:453–460, 1967.

[116] G. E. Stephan.
Territorial division: The least-time constraint behind the formation of subnational boundaries.
Science, 196:523–524, 1977. pdf (⊞)

[117] G. E. Stephan.
Territorial subdivision.
Social Forces, 63:145–159, 1984. pdf (⊞)

[118] A. N. Strahler.
Hypsometric (area altitude) analysis of erosional topography.
Bulletin of the Geological Society of America, 63:1117–1142, 1952.

References XVII

[119] S. H. Strogatz.

Nonlinear Dynamics and Chaos.
Addison Wesley, Reading, Massachusetts, 1994.

[120] S. H. Strogatz.

Romanesque networks.
Nature, 433:365–366, 2005. pdf (⊞)

[121] H. Takayasu.

Steady-state distribution of generalized aggregation system with injection.
Physcial Review Letters, 63(23):2563–2565, December 1989.

[122] H. Takayasu, I. Nishikawa, and H. Tasaki.

Power-law mass distribution of aggregation systems with injection.
Physical Review A, 37(8):3110–3117, April 1988.

[123] M. Takayasu and H. Takayasu.

Apparent independency of an aggregation system with injection.
Physical Review A, 39(8):4345–4347, April 1989.

[124] D. G. Tarboton, R. L. Bras, and I. Rodríguez-Iturbe.

Comment on “On the fractal dimension of stream networks” by Paolo La Barbera and Renzo Rosso.
Water Resources Research, 26(9):2243–4, September 1990.

[125] D. W. Thompson.

On Growth and From.
Cambridge University Pres, Great Britain, 2nd edition, 1952.

[126] D. W. Thompson.

On Growth and Form — Abridged Edition.
Cambridge University Press, Great Britain, 1961.

References XVIII

[127] E. Tokunaga.

The composition of drainage network in Toyohira River Basin and the valuation of Horton's first law.
Geophysical Bulletin of Hokkaido University, 15:1–19, 1966.

[128] E. Tokunaga.

Consideration on the composition of drainage networks and their evolution.
Geographical Reports of Tokyo Metropolitan University, 13:G1–27, 1978.

[129] E. Tokunaga.

Ordering of divide segments and law of divide segment numbers.
Transactions of the Japanese Geomorphological Union, 5(2):71–77, 1984.

[130] J. Travers and S. Milgram.

An experimental study of the small world problem.
Sociometry, 32:425–443, 1969. pdf (⊞)

[131] D. L. Turcotte, J. D. Pelletier, and W. I. Newman.

Networks with side branching in biology.
Journal of Theoretical Biology, 193:577–592, 1998.

[132] J. Um, S.-W. Son, S.-I. Lee, H. Jeong, and B. J. Kim.

Scaling laws between population and facility densities.
Proc. Natl. Acad. Sci., 106:14236–14240, 2009. pdf (⊞)

[133] F. Vega-Redondo.

Complex Social Networks.
Cambridge University Press, 2007.

References XIX

[134] S. Wasserman and K. Faust.

Social Network Analysis: Methods and Applications.
Cambridge University Press, Cambridge, UK, 1994.

[135] D. J. Watts.

A simple model of global cascades on random networks.
Proc. Natl. Acad. Sci., 99(9):5766–5771, 2002. pdf (⊞)

[136] D. J. Watts.

Six Degrees.
Norton, New York, 2003.

[137] D. J. Watts, P. S. Dodds, and M. E. J. Newman.

Identity and search in social networks.
Science, 296:1302–1305, 2002. pdf (⊞)

[138] D. J. Watts and S. J. Strogatz.

Collective dynamics of 'small-world' networks.
Nature, 393:440–442, 1998. pdf (⊞)

[139] P. D. Weinberg and C. R. Ethier.

Twenty-fold difference in hemodynamic wall shear stress between murine and human aortas.
Journal of Biomechanics, 40(7):1594–1598, 2007. pdf (⊞)

[140] G. B. West, J. H. Brown, and B. J. Enquist.

A general model for the origin of allometric scaling laws in biology.
Science, 276:122–126, 1997. pdf (⊞)

[141] E. Wigner.

The unreasonable effectivenss of mathematics in the natural sciences.
Communications on Pure and Applied Mathematics, 13:1–14, 1960. pdf (⊞)

References XX

[142] H. S. Wilf.

Generatingfunctionology.
A K Peters, Natick, MA, 3rd edition, 2006. pdf (⊞)

[143] Q. Xia.

The formation of a tree leaf.
Submitted. pdf (⊞)

[144] Q. Xia.

Optimal paths related to transport problems.
Communications in Contemporary Mathematics, 5:251–279, 2003. pdf (⊞)

[145] G. U. Yule.

A mathematical theory of evolution, based on the conclusions of Dr J. C. Willis, F.R.S.
Phil. Trans. B, 213:21–, 1924.

[146] W. W. Zachary.

An information flow model for conflict and fission in small groups.
J. Anthropol. Res., 33:452–473, 1977.

[147] G. K. Zipf.

Human Behaviour and the Principle of Least-Effort.
Addison-Wesley, Cambridge, MA, 1949.