

References

- Abbasbandy, S. and Amirfakhrian, M. (2006). The nearest trapezoidal form of a generalized left right fuzzy number. *International Journal of Approximate Reasoning*, **43**(2), 166–178.
- Abbasbandy, S. and Hajjari, T. (2010). Weighted trapezoidal approximation – Preserving cores of a fuzzy number. *Computers & Mathematics with Applications*, **59**(9), 3066–3077.
- Abellanas, M., Claverol, M., and Hurtado, F. (2007). Point set stratification and Delaunay depth. *Computational Statistics & Data Analysis*, **51**, 2513–2530.
- Abelson, H., Sussman, G., and Sussman, J. (2002). *Struktura i interpretacja programów komputerowych*. WNT, Warszawa.
- Abraham, C., Biau, G., and Cadre, B. (2003). Simple estimation of the mode of a multivariate density. *The Canadian Journal of Statistics / La Revue Canadienne de Statistique*, **31**(1), 23–34.
- Abramovitz, M. and Stegun, I. A. (1972). *Handbook of Mathematical Functions with Formulas, Graphs, and Mathematical Tables*. National Bureau of Standards Applied Mathematics Series.
- Abramowitz, M. and Stegun, I. A. (1972). *Handbook of mathematical functions*. Dover, New York. URL http://www.iopb.res.in/~somen/abramowitz_and_stegun/.
- Abreu, J. and Rico-Juan, J. (2014). A new iterative algorithm for computing a quality approximate median of strings based on edit operations. *Pattern Recognition Letters*, **36**, 74–80.
- Achiezer, N. (1957). *Teoria aproksymacji*. PWN, Warszawa.
- Aczel, A. (1996). *Complete Business Statistics*. Irvin.
- Aczél, J. (1948). On mean values. *Bulletin of the American Mathematical Society*, **54**(4), 392–400.
- Afsari, B. (2011). Riemannian l^p center of mass: Existence, uniqueness, and convexity. *Proceedings of the American Mathematical Society*, **139**, 655–673.
- Afsari, B., Tron, R., and Vidal, R. (2013). On the convergence of gradient descent for finding the Riemannian center of mass. *SIAM Journal of Control and Optimization*, **51**(3), 2230–2260.
- Aftab, K., Hartley, R., and Trumpf, J. (2015). Generalized Weiszfeld algorithms for Lq optimization. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, **37**(4), 728–745.
- Aggarwal, C. C., Hinneburg, A., and Keim, D. A. (2001a). On the surprising behavior of distance metrics in high dimensional space. *Lecture Notes in Computer Science*, **1973**, 420–434.
- Aggarwal, C. C., Hinneburg, A., and Keim, D. A. (2001b). On the surprising behavior of distance metric in high-dimensional space. *Lecture Notes in Computer Science*, **1973**, 420–434.
- Ahn, B. S. (2008). Preference relation approach for obtaining OWA operators weights. *International Journal of Approximate Reasoning*, **47**(2), 166–178.
- Ahn, B. S. (2010). Parameterized OWA operator weights: An extreme point approach. *International Journal of Approximate Reasoning*, **51**(7), 820–831.
- Aho, A., Garey, M., and Ullman, J. (1972). The transitive reduction of a directed graph. *SIAM Journal on Computing*, **1**(2), 131–137.
- Aho, A., Sethi, R., and Ullman, J. (2002). *Kompilatory. Reguły, metody i narzędzia*. WNT, Warszawa.
- Alatalo, R. (1981). Problems in the measurement of evenness in ecology. *Oikos*, **37**, 199–204.
- Alonso, J. M., Castiello, C., and Mencar, C. (2015). Interpretability of fuzzy systems: Current research trends and prospects. In Kacprzyk, J. and Pedrycz, W., editors, *Springer Handbook of Computational Intelligence*, pages 219–237. Springer, Berlin, Heidelberg.
- Alonso, S., Cabrerizo, F. J., Herrera-Viedma, E., and Herrera, F. (2009). h -index: A review focused on its variants, computation and standardization for different scientific fields. *Journal of Informetrics*, **3**, 273–289.

- Alonso, S., Cabrerizo, F. J., Herrera-Viedma, E., and Herrera, F. (2010). *hg-index: A new index to characterize the scientific output of researchers based on the h - and g -indices*. *Scientometrics*, **82**(2), 391–400.
- Aloupis, G. (2006). Geometric measures of data depth. In *DIMACS Series in Discrete Mathematics and Theoretical Computer Science*, pages 147–158.
- Aloupis, G. and McLeish, E. (2005). A lower bound for computing Oja depth. *Information Processing Letters*, **96**, 151–153.
- Aloupis, G., Cortés, C., Gómez, F., Soss, M., and Toussaint, G. (2002). Lower bounds for computing statistical depth. *Computational Statistics & Data Analysis*, **40**, 223–229.
- Aloupis, G., Langerman, S., Soss, M., and Toussaint, G. (2003). Algorithms for bivariate medians and a Fermat-Torricelli problem for lines. *Computational Geometry: Theory and Applications*, **26**(1), 69–79.
- Altman, A. (2007). *The axiomatic approach to ranking systems*. PhD thesis, Israel Institute of Technology, Haifa, Izrael.
- Altman, A. and Tennenholtz, M. (2005). Ranking systems: The PageRank axioms. In *Proc. 6th ACM Conf. on Electronic Commerce*.
- Anderson, D., Keller, J., and Havens, T. (2010). Learning fuzzy-valued fuzzy measures for the fuzzy-valued Sugeno fuzzy integral. *Lecture Notes in Artificial Intelligence*, **6178**, 502–511.
- Anderson, E. et al. (1999). *LAPACK Users’ Guide*. SIAM. Available on-line at http://www.netlib.org/lapack/lug/lapack_lug.html.
- Anderson, T. R., Hankin, R. K. S., and Killworth, P. D. (2008). Beyond the Durfee square: Enhancing the h -index to score total publication output. *Scientometrics*, **69**(3), 577–588.
- Angelov, P. and Yager, R. R. (2013a). Density-based averaging – A new operator for data fusion. *Information Sciences*, **222**, 163–174.
- Angelov, P. and Yager, R. (2013b). Density-based averaging: A new operator for data fusion. *Information Sciences*, **222**(Supplement C), 163–174.
- Aristondo, O., García-Lapresta, J., Lasso de la Vega, C., and Marques Pereira, R. (2013). Classical inequality indices, welfare and illfare functions, and the dual decomposition. *Fuzzy Sets and Systems*, **228**, 114–136.
- Arnold, B. C. (2008). Pareto and generalized pareto distributions. In *Economic Studies in Equality, Social Exclusion and Well-Being*, pages 119–145. Springer.
- Arrow, K. J. (1950). A difficulty in the concept of social welfare. *Journal of Political Economy*, **58**(4), 328–346.
- Arrow, K. J. (1963). *Social Choice and Individual Values*. Yale University Press, New Haven.
- Arunachalam, S. (1998). Citation analysis: Do we need a thoeory? *Scientometrics*, **43**(1), 141–142.
- Atanassov, K. T. (1986). Intuitionistic fuzzy sets. *Fuzzy Sets and Systems*, **20**, 87–96.
- Atanassov, K. (1999). *Intuitionistic Fuzzy Sets*. Physica-Verlag, Heidelberg, New York.
- Auda, G. and Kamel, M. (1999). Modular neural networks: A survey. *International Journal of Neural Systems*, **9**(2), 129–151.
- Bååth, R. (2012). The state of naming conventions in R. *The R Journal*, **4**(2), 74–75.
- Baczyński, M. and Jayaram, B. (2008). *Fuzzy implications*. Springer-Verlag, Berlin.
- Baczyński, M. and Jayaram, B. (2008). (S, N)- and R-implications: A state-of-the-art survey. *Fuzzy Sets and Systems*, **159**(14), 1836–1859.
- Bahlmann, C. (2006). Directional features in online handwriting recognition. *Pattern Recognition*, **39**(1), 115–125.
- Baker, F. and Hubert, L. (1975). Measuring the power of hierarchical cluster analysis. *Journal of the American Statistical Association*, **70**(349), 31–38.
- Baldi, P. and Brunak, S. (2001). *Bioinformatics: The Machine Learning Approach*. MIT Press.

- Ball, G. and Hall, D. (1965). ISODATA: A novel method of data analysis and pattern classification. Technical Report AD699616.
- Ball, P. (2005). Index aims for fair ranking of scientists. *Nature*, **436**, 900.
- Ban, A., Brândaș, A., Coroianu, L., Negruțiu, C., and Nica, O. (2011a). Approximations of fuzzy numbers by trapezoidal fuzzy numbers preserving the ambiguity and value. *Computers & Mathematics with Applications*, **61**(5), 1379–1401.
- Ban, A. I. (2008). Approximation of fuzzy numbers by trapezoidal fuzzy numbers preserving the expected interval. *Fuzzy Sets and Systems*, **159**, 1327–1344.
- Ban, A. I. (2009a). Triangular and parametric approximations of fuzzy numbers – Inadvertences and corrections. *Fuzzy Sets and Systems*, **160**(21), 3048–3058.
- Ban, A. I. (2009b). On the nearest parametric approximation of a fuzzy number – revisited. *Fuzzy Sets and Systems*, **160**, 3027–3047.
- Ban, A. I. and Ban, O. I. (2012). Optimization and extensions of a fuzzy multicriteria decision making method and applications to selection of touristic destinations. *Expert Systems with Applications*, **39**(8), 7216–7225.
- Ban, A. I. and Coroianu, L. (2012). Nearest interval, triangular and trapezoidal approximation of a fuzzy number preserving ambiguity. *International Journal of Approximate Reasoning*, **53**(5), 805–836.
- Ban, A. I. and Coroianu, L. (2015). Simplifying the search for effective ranking of fuzzy numbers. *IEEE Transactions on Fuzzy Systems*, **23**, 327–339.
- Ban, A. I., Coroianu, L., and Grzegorzewski, P. (2011b). Trapezoidal approximation and aggregation. *Fuzzy Sets and Systems*, **177**(1), 45–59.
- Ban, A. I., Coroianu, L., and Grzegorzewski, P. (2013). A fixed-shape fuzzy median of a fuzzy sample. In *Proc. EUSFLAT’13*, pages 215–222. Atlantis Press.
- Ban, A. I., Coroianu, L., and Khastan, A. (2016). Conditioned weighted L–R approximations of fuzzy numbers. *Fuzzy Sets and Systems*, **283**, 56–82.
- Baneyx, A. (2008). *Publish or Perish* as citation metrics used to analyze scientific output in the humanities: International case studies in economics, geography, social sciences, philosophy, and history. *Archivum Immunologiae et Therapia Experimentalis*, **56**, 363–371.
- Banks, M. G. (2006). An extension of the Hirsch index: Indexing scientific topics and compounds. *Scientometrics*, **69**(1), 161–168.
- Bar-Ilan, J. (2006). H-index for prize medalists revisited. *ISSI Newsletter*, **2**(1), 3–5.
- Bar-Ilan, J. (2008). Informetrics at the beginning of the 21st century — A review. *Journal of Informetrics*, **2**, 1–52.
- Barabási, A., Newman, M., and Watts, D. (2006). *The Structure and Dynamics of Networks*. Princeton University Press.
- Barcza, K. and Telcs, A. (2009). Paretian publication patterns imply Paretian Hirsch index. *Scientometrics*, **81**(2), 513–519.
- Bargiela, A. and Pedrycz, W. (2003). *Granular Computing: An Introduction*. Kluwer Academic Publishers, Boston, MA.
- Barnett, G. A., Fink, E. L., and Debus, M. B. (1989). Mathematical model of academic citation age. *Communication research*, **4**(16), 510–531.
- Barra, J. (1982). *Matematyczne podstawy statystyki*. PWN, Warszawa.
- Barrow, J. D., Bhavsar, S. P., and Sonoda, D. H. (1985). Minimal spanning trees, filaments and galaxy clustering. *Monthly Notices of the Royal Astronomical Society*, **216**(1), 17–35.
- Bartłomiejczyk, L. and Drewniak, J. (2004). A characterization of sets and operations invariant under bijections. *Aequationes Mathematicae*, **68**, 1–9.

- Bartneck, C. and Kokkelmans, S. (2011). Detecting h-index manipulation through self-citation analysis. *Scientometrics*, **87**, 85–98.
- Bartoszuk, M. and Gagolewski, M. (2014). A fuzzy R code similarity detection algorithm. In Laurent, A. et al., editors, *Information Processing and Management of Uncertainty in Knowledge-Based Systems, Part III*, volume 444 of *Communications in Computer and Information Science*, pages 21–30. Springer. doi:10.1007/978-3-319-08852-5_3.
- Bartoszuk, M. and Gagolewski, M. (2015). Detecting similarity of R functions via a fusion of multiple heuristic methods. In Alonso, J., Bustince, H., and Reformat, M., editors, *Proc. IFSA/EUSFLAT’15*, pages 419–426. Atlantis Press. doi:10.2991/ifsa-eusflat-15.2015.61.
- Bartoszuk, M. and Gagolewski, M. (2017). Binary aggregation functions in software plagiarism detection. In *Proc. FUZZ-IEEE’17*. IEEE. doi:10.1109/FUZZ-IEEE.2017.8015582. no. 8015582.
- Bartoszuk, M. and Gagolewski, M. (2020). SimilaR: R code clone and plagiarism detection. *R Journal*, **12**(1), 367–385. doi:10.32614/RJ-2020-017. URL <https://CRAN.R-project.org/package=SimilaR>.
- Bartoszuk, M. and Gagolewski, M. (2021). T-norms or t-conorms? How to aggregate similarity degrees for plagiarism detection. *Knowledge-Based Systems*, **231**, 107427. doi:10.1016/j.knosys.2021.107427.
- Bartoszuk, M., Beliakov, G., Gagolewski, M., and James, S. (2016a). Fitting aggregation functions to data: Part I – Linearization and regularization. In Carvalho, J. et al., editors, *Information Processing and Management of Uncertainty in Knowledge-Based Systems, Part II*, volume 611 of *Communications in Computer and Information Science*, pages 767–779. Springer. doi:10.1007/978-3-319-40581-0_62.
- Bartoszuk, M., Beliakov, G., Gagolewski, M., and James, S. (2016b). Fitting aggregation functions to data: Part II – Idempotization. In Carvalho, J. et al., editors, *Information Processing and Management of Uncertainty in Knowledge-Based Systems, Part II*, volume 611 of *Communications in Computer and Information Science*, pages 780–789. Springer. doi:10.1007/978-3-319-40581-0_63.
- Bassett, Jr., G. W. (1991). Equivariant, monotonic, 50% breakdown estimators. *The American Statistician*, **45**(2), 135–137.
- Basu, A. (2007). A note on the connection between the Hirsch index and the Random Hierarchical model. *ISSI Newsletter*, **3**(2), 24–27.
- Batista, P. D., Campiteli, M. G., Kinouchi, O., and Martinez, A. S. (2006). Is it possible to compare researchers with different scientific interests? *Scientometrics*, **68**(1), 179–189.
- Becker, R., Chambers, J., and Wilks, A. (1998). *The New S Language*. Chapman & Hall.
- Beckman, R. and Cook, R. (1983). Outlier.....s. *Technometrics*, **25**(2), 119–149.
- Bedall, F. K. and Zimmermann, H. (1979). Algorithm AS 143: The Mediancentre. *Journal of the Royal Statistical Society. Series C (Applied Statistics)*, **28**(3), 325–328.
- Bednarek, A. (1968). An extension of Light’s associativity test. *American Mathematical Monthly*, **75**(5), 531–532.
- Beirlant, J., Glänzel, W., Carbonez, A., and Leemans, H. (2007). Scoring research output using statistical quantile plotting. *Journal of Informetrics*, **1**, 185–192.
- Beliakov, G., James, S., and Li, G. (2011). Learning Choquet-integral-based metrics for semisupervised clustering. *IEEE Transactions on Fuzzy Systems*, **19**(3), 562–574.
- Beliakov, G. (2000). Shape preserving approximation using least squares splines. *Approximation Theory and its Applications*, **16**(4), 80–98.
- Beliakov, G. (2002). Monotone approximation of aggregation operators using least squares splines. *International Journal of Uncertainty, Fuzziness and Knowledge-based Systems*, **10**, 659–676.
- Beliakov, G. (2003). How to build aggregation operators from data. *International Journal of Intelligent Systems*, **18**, 903–923.
- Beliakov, G. (2005a). Learning weights in the generalized OWA operators. *Fuzzy Optimization and Decision Making*, **4**, 119–130.

- Beliakov, G. (2005b). Monotonicity preserving approximation of multivariate scattered data. *BIT Numerical Mathematics*, **45**, 653–677.
- Beliakov, G. (2007). Construction of aggregation operators for automated decision making via optimal interpolation and global optimization. *Journal of Industrial and Management Optimization*, **3**(2), 193–208.
- Beliakov, G. (2009). Construction of aggregation functions from data using linear programming. *Fuzzy Sets and Systems*, **160**, 65–75.
- Beliakov, G. (2011). Fast computation of trimmed means. *Journal of Statistical Software*, **39**, Code snippet 2.
- Beliakov, G. and James, S. (2008). Using Choquet integrals for kNN approximation and classification. In *Proc. FUZZ-IEEE’08*, pages 1311–1317.
- Beliakov, G. and James, S. (2011). Citation-based journal ranks: The use of fuzzy measures. *Fuzzy Sets and Systems*, **167**, 101–119.
- Beliakov, G. and James, S. (2012). Using linear programming for weights identification of generalized Bonferroni means in R. *Lecture Notes in Computer Science*, **7647**, 35–44.
- Beliakov, G. and James, S. (2013). Stability of weighted penalty-based aggregation functions. *Fuzzy Sets and Systems*, **226**(1), 1–18.
- Beliakov, G. and James, S. (2014). A penalty-based aggregation operator for non-convex intervals. *Knowledge-Based Systems*, **70**, 335–344.
- Beliakov, G. and James, S. (2015). Unifying approaches to consensus across different preference representations. *Applied Soft Computing*, **35**, 888–897.
- Beliakov, G. and Warren, J. (2001). Appropriate choice of aggregation operators in fuzzy decision support systems. *IEEE Transactions on fuzzy systems*, **9**(6), 773–784.
- Beliakov, G. and Wilkin, T. (2014). On some properties of weighted averaging with variable weights. *Information Sciences*, **281**, 1–7.
- Beliakov, G., Pradera, A., and Calvo, T. (2007). *Aggregation functions: A guide for practitioners*. Springer-Verlag.
- Beliakov, G., Bustince, H., James, S., Calvo, T., and Fernandez, J. (2011a). Aggregation for Atanassov’s intuitionistic and interval valued fuzzy sets: The median operator. *IEEE Transactions on Fuzzy Systems*, **20**, 487–498.
- Beliakov, G., Calvo, T., and James, S. (2011b). On penalty-based aggregation functions and consensus. In Herrera-Viedma, E. et al., editors, *Consensual Processes, STUDFUZZ 267*, pages 23–40.
- Beliakov, G., Calvo, T., and James, S. (2013). Aggregating fuzzy implications to measure group consensus. In *Proc. Joint IFSA World Congress and NAFIPS Annual Meeting’13*, pages 1016–1021. Edmonton, Canada.
- Beliakov, G., Calvo, T., and James, S. (2014a). Consensus measures constructed from aggregation functions and fuzzy implications. *Knowledge-Based Systems*, **55**, 1–8.
- Beliakov, G., Calvo, T., and Wilkin, T. (2014b). Three types of monotonicity of averaging functions. *Knowledge-Based Systems*, **72**, 114–122.
- Beliakov, G., James, S., and Nimmo, D. (2014c). Can indices of ecological evenness be used to measure consensus? In *Proc. IEEE Intl. Conf. Fuzzy Systems’15*, pages 1–8. Beijing, China.
- Beliakov, G., James, S., and Smith, L. (2014d). Single-preference consensus measures based on models of ecological evenness. *Lecture Notes in Artificial Intelligence*, **8825**, 50–59.
- Beliakov, G., Calvo, T., and Wilkin, T. (2015a). On the weak monotonicity of Gini means and other mixture functions. *Information Sciences*, **300**, 70–84.
- Beliakov, G., James, S., and Nimmo, D. (2015b). Using aggregation functions to model human judgments of species diversity. *Information Sciences*, **306**, 21–33.
- Beliakov, G., Bustince, H., and Calvo, T. (2016a). *A Practical Guide to Averaging Functions*. Springer.

- Beliakov, G., Gagolewski, M., and James, S. (2016b). Penalty-based and other representations of economic inequality. *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*, **24**(Suppl.1), 1–23. doi:10.1142/S0218488516400018.
- Beliakov, G., Gagolewski, M., and James, S. (2018). Least median of squares (LMS) and least trimmed squares (LTS) fitting for the weighted arithmetic mean. In Medina, J. et al., editors, *Information Processing and Management of Uncertainty in Knowledge-Based Systems. Theory and Foundations*, pages 367–378. Springer. doi:10.1007/978-3-319-91476-3_31.
- Beliakov, G., Gagolewski, M., and James, S. (2019a). Aggregation on ordinal scales with the Sugeno integral for biomedical applications. *Information Sciences*, **501**, 377–387. doi:10.1016/j.ins.2019.06.023.
- Beliakov, G., Gagolewski, M., James, S., Pace, S., Pastorello, N., Thilliez, E., and Vasa, R. (2019b). Measuring traffic congestion: An approach based on learning weighted inequality, spread and aggregation indices from comparison data. *Applied Soft Computing*, **67**, 910–919. doi:10.1016/j.asoc.2017.07.014.
- Beliakov, G., Gagolewski, M., and James, S. (2020a). Robust fitting for the Sugeno integral with respect to general fuzzy measures. *Information Sciences*, **514**, 449–461. doi:10.1016/j.ins.2019.11.024.
- Beliakov, G., Gagolewski, M., and James, S. (2020b). DC optimization for constructing discrete Sugeno integrals and learning nonadditive measures. *Optimization*, **69**(12), 2515–2534. doi:10.1080/02331934.2019.1705300.
- Beliakov, G., Gagolewski, M., and James, S. (2022a). Reduction of variables and constraints in fitting antibuoyant fuzzy measures to data using linear programming. *Fuzzy Sets and Systems*. doi:10.1016/j.fss.2022.06.025. in press.
- Beliakov, G., Gagolewski, M., and James, S. (2022b). Hierarchical data fusion processes involving the Möbius representation of capacities. *Fuzzy Sets and Systems*, **433**, 1–21. doi:10.1016/j.fss.2021.02.006.
- Bellosta, C. J. G. (2009). *ADGofTest: Anderson-Darling GoF test*. URL <http://CRAN.R-project.org/package=ADGofTest>. R package version 0.1.
- Benjamini, Y. and Hochberg, Y. (1995). Controlling False Discovery Rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society. Series B*, **57**(1), 289–300.
- Bermudez, P. Z. and Kotz, S. (2010). Parameter estimation of the Generalized Pareto Distribution. Part II. *Journal of Statistical Planning and Inference*, **140**(6), 1374–1388.
- Bernasconi, M., Choirat, C., and Seri, R. (2014). Empirical properties of group preference aggregation methods employed in AHP: Theory and evidence. *European Journal of Operational Research*, **232**, 584–592.
- Berntsen, J., Espelid, T., and Genz, A. (1991). An adaptive algorithm for the approximate calculation of multiple integrals. *ACM Transactions on Mathematical Software*, **17**(4), 437–451.
- Berson, T. A. (1993). Differential cryptanalysis mod 2^{32} with applications to MD5. *Lecture Notes in Computer Science*, **658**, 71–80.
- Bertoluzza, C., Corral, N., and Salas, A. (1995). On a new class of distances between fuzzy numbers. *Mathware and Soft Computing*, **2**, 71–84.
- Beyer, K., Goldstein, J., Ramakrishnan, R., and Shaft, U. (1998). When is nearest neighbor meaningful? In Beeri, C. and Buneman, P., editors, *Proc. ICDT*, pages 217–235. Springer-Verlag.
- Bezdek, J. C. (1981). *Pattern Recognition with Fuzzy Objective Function Algorithms*. Springer.
- Bezdek, J. C., Spillman, B., and Spillman, R. (1979). Fuzzy relation spaces for group decision theory: An application. *Fuzzy Sets and Systems*, **2**, 5–14.
- Bezdek, J. C., Ehrlich, R., and Full, W. (1984a). FCM: The fuzzy c-means clustering algorithm. *Computer and Geosciences*, **10**(2–3), 191–203.
- Bezdek, J. and Pal, N. (1998). Some new indexes of cluster validity. *IEEE Transactions on Systems, Man, and Cybernetics, Part B (Cybernetics)*, **28**(3), 301–315. doi:10.1109/3477.678624.
- Bezdek, J., Ehrlich, R., and Full, W. (1984b). FCM: The fuzzy c-means clustering algorithm. *Computers & Geosciences*, **10**(2–3), 191–203. doi:10.1016/0098-3004(84)90020-7.
- Bickel, P. and Doksum, K. (1977). *Mathematical Statistics: Basic Ideas and Selected Topics*. Holden-Day.

- Bickel, P. and Lehmann, E. (1975a). Descriptive statistics for nonparametric models. I. Introduction. II. Location. *The Annals of Statistics*, **3**, 1039–1069.
- Bickel, P. and Lehmann, E. (1975b). Descriptive statistics for nonparametric models. III. Dispersion. *The Annals of Statistics*, **4**(6), 1139–1158.
- Bickel, P. and Lehmann, E. (1975c). Descriptive statistics for nonparametric models. IV. Spread. In Jureckova, A., editor, *Contributions to Statistics*, pages 33–40. Academia, Prague.
- Biecek, P. (2011). *Przewodnik po pakiecie R*. GiS, Wrocław.
- Biecek, P. (2012). *Analiza danych z programem R. Modele liniowe z efektami stałymi, losowymi i mieszanymi*. PWN, Warszawa.
- Bilenko, M., Mooney, R., Cohen, W., Ravikumar, P., and Fienberg, S. (2003). Adaptive name matching in information integration. *IEEE Intelligent Systems*, **18**(5), 16–23.
- Billard, L. and Diday, E. (2003). From the statistics of data to the statistics of knowledge: Symbolic data analysis. *Journal of the American Statistical Association*, **98**(462), 470–486.
- Bille, P. (2005). A survey on tree edit distance and related problems. *Theoretical Computer Science*, **337**(1–3), 217–239.
- Billingsley, P. (1979). *Probability and Measure*. Wiley.
- Billingsley, P. (2009). *Prawdopodobieństwo i miara*. PWN, Warszawa.
- Birkhoff, G. (1967). *Lattice Theory*. American Mathematical Society, Providence, RI.
- Bisschop, J. et al. (2012). *AIMMS Optimization Modeling*. Paragon Decision Technology.
- B.J. Oommen, R. L. (1997). Pattern recognition of strings with substitutions, insertions, deletions and generalized transpositions. *Pattern Recognition*, **30**, 789–800.
- Blizard, W. D. (1989). Multiset theory. *Notre Dame Journal of Formal Logic*, **30**(1), 36–66.
- Bloch, I. (1996). Information combination operators for data fusion: A comparative review with classification. *IEEE Transactions on Systems, Man, and Cybernetics – Part A: Systems and Humans*, **26**(1), 52–67.
- Bloomfield, P. and Steiger, W. L. (1983). *Least Absolute Deviations. Theory, applications, and algorithms*. Birkhäuser, Boston, Basel, Stuttgart.
- Blum, M., Floyd, R. W., Pratt, V., Rives, R. L., and Tarjan, R. E. (1973). Time bounds for selection. *Journal of Computer and System Sciences*, **7**(4), 448–460.
- Bock, H.-H. (2008). Origins and extensions of the k -means algorithm in cluster analysis. *Electronic Journ@l for History of Probability and Statistics*, **4**(2), 1–18.
- Bock, H.-H. and Diday, E. (2000). *Analysis of Symbolic Data*. Springer.
- Bodenhofer, U., de Baets, B., and Fodor, J. (2007). A compendium of fuzzy weak orders: Representations and constructions. *Fuzzy Sets and Systems*, **158**, 811–829.
- Bodenhofer, U. (1999). *A similarity-based generalization of fuzzy orderings*. PhD thesis, Johannes Kepler University, Linz, Austria.
- Bodjanova, S. (2005). Median value and median interval of a fuzzy number. *Information Sciences*, **172**, 73–89.
- Boell, S. K. and Wilson, C. S. (2010). Journal Impact Factors for evaluation scientific performance: Use of h -like indicators. *Scientometrics*, **82**, 613–626.
- Bollen, J., Rodriguez, M. A., and van de Sompel, H. (2006). Journal status. *Scientometrics*, **69**(3), 669–687.
- Bonferroni, C. (1930). *Elementi di statistica generale*. Libreria Seber, Firenze.
- Bonitz, M. (2005). Ten years of Matthew effect for countries. *Scientometrics*, **64**(3), 375–379.
- Bonnett, X., Shine, R., and Lourdais, O. (2002). Taxonomic chauvinism. *TRENDS in Ecology and Evolution*, **21**(4), 1–3.

- Bookstein, A. (2001). Implications of ambiguity for scientometric measurement. *Journal of the American Society for Information Science and Technology*, **52**(1), 74–79.
- Boomsma, W., Mardia, K., Taylor, C., Ferkinghoff-Borg, J., Krogh, A., and Hamelryck, T. (2008). A generative, probabilistic model of local protein structure. *Proceedings of the National Academy of Sciences*, **105**(26), 8932–8937.
- Bornmann, L. and Daniel, H.-D. (2007a). Convergent validation of peer review decisions using the h index. Extent of and reasons for type I and type II errors. *Journal of Informetrics*, **1**, 204–213.
- Bornmann, L. and Daniel, H.-D. (2007b). What do we know about the h index? *Journal of the American Society for Information Science and Technology*, **58**(9), 1381–1385.
- Bornmann, L. and Daniel, H.-D. (2008). What do citation counts measure? A review of studies on citing behavior. *Journal of Documentation*, **64**(1), 45–80.
- Bornmann, L. and Daniel, H.-D. (2009). The state of h index research. *EMBO Reports*, **10**(1), 2–5.
- Bornmann, L., Mutz, R., and Daniel, H.-D. (2007). The b index as a measure of scientific excellence. A promising supplement to the h index. *Cybermetrics*, **11**(1).
- Bornmann, L., Mutz, R., and Daniel, H.-D. (2008). Latent Markov modeling applied to grant peer review. *Journal of Informetrics*, **2**(3), 217–228.
- Borovskikh, Y. V. (1981). Nonuniform estimation of rate of convergence for L-statistics. *Ukrainian Mathematical Journal*, **33**(2), 127–132.
- Borovskikh, Y. V. and Weber, N. C. (2010). Asymptotic distributions for a class of generalized L-statistics. *Bernoulli*, **16**(4), 1177–1190.
- Borůvka, O. (1926a). O jistém problému minimálním. *Práce Moravské Přírodovědecké Společnosti v Brně*, **3**, 37–58.
- Borůvka, O. (1926b). Příspěvek k řešení otázky ekonomické stavby elektrovodních sítí. *Elektronický Obzor*, **15**, 153–154.
- Borsik, J. and Doboš, J. (1981). On a product of metric spaces. *Mathematica Slovaca*, **31**, 193–205.
- Bortot, S. and Marques Pereira, R. A. (2014). The binomial Gini inequality indices and the binomial decomposition of welfare functions. *Fuzzy Sets and Systems*, **255**, 92–114.
- Bortot, S. and Marques Pereira, R. (2015). On a new poverty measure constructed from the exponential mean. In *Proc. IFSA/EUSFLAT’15*, pages 333–340. Atlantis Press.
- Bottema, O. (1981). Het begrip “merkwaardig” met betrekking tot punten in de driehoeksmetkunde. *Nieuw Tijdschr. Wisk.*, **69**, 2–7.
- Boucher, C. and Ma, B. (2011). Closest string with outliers. *BMC Bioinformatics*, **12**, S55.
- Boussou, D. and Perny, P. (1992). Ranking methods for valued preference relations: A characterization of a method based on leaving and entering flows. *European Journal of Operational Research*, **61**(1–2), 186–194.
- Bouyssou, D. (1992). Ranking methods based on valued preference relations: A characterization of the net flow method. *European Journal of Operational Research*, **60**(1), 61–67.
- Bouyssou, D. and Marchant, T. (2010). Consistent bibliometric rankings of authors and of journals. *Journal of Informetrics*, **4**, 365–378.
- Bouyssou, D. and Marchant, T. (2011a). Bibliometric rankings of journals based on Impact Factors: An axiomatic approach. *Journal of Informetrics*, **5**, 75–86.
- Bouyssou, D. and Marchant, T. (2011b). Ranking scientists and departments in a consistent manner. *Journal of the American Society for Information Science and Technology*, **62**(9), 1761–1769.
- Boyack, K. W., Klavans, R., and Börner, K. (2005). Mapping the backbone of science. *Scientometrics*, **64**(3), 351–374.
- Boyd, S. and Vandenberghe, L. (2009). *Convex Optimization*. Cambridge University Press.

- Boytsov, L. (2011). Indexing methods for approximate dictionary searching: Comparative analyses. *ACM Journal of Experimental Algorithmics*, **16**, 1–86.
- Bras-Amorós, M., Domingo-Ferrer, J., and Torra, V. (2011). A bibliometric index based on the collaboration distance between cited and citing authors. *Journal of Informetrics*, **5**(2), 248–264.
- Braun, T., Glänzel, W., and Schubert, A. (2006). A Hirsch-type index for journals. *Scientometrics*, **69**(1), 169–173.
- Bravington, M. (2003). Debugging without (too many) tears. *R News*, **3**(3), 29–32.
- Breiman, L. (2001). Random forests. *Machine Learning*, **45**, 5–32.
- Breiman, L., Friedman, J. H., Olshen, R. A., and Stone, C. J. (1984). *Classification and Regression Trees*. Brooks/Cole Publishing, Monterey.
- Bremner, D., Chen, D., Iacono, J., Langerman, S., and Morin, P. (2008). Output-sensitive algorithms for Tukey depth and related problems. *Statistics and Computing*, **18**(3), 259–266.
- Brent, R. (1973). *Algorithms for minimization without derivatives*. Prentice-Hall.
- Brezis, H. (2010). *Functional analysis, Sobolev spaces and partial differential equations*. Springer.
- Brimberg, J. (1995). The Fermat-Weber location problem revisited. *Mathematical Programming*, **71**, 71–76.
- Brimberg, J. and Love, R. F. (1993). Global convergence of a generalized iterative procedure for the minisum location problem with l_p distances. *Operations Research*, **41**(6), 1153–1163.
- Brin, S. (1995a). Near neighbor search in large metric spaces. In *Proc. Intl. Conf. Very Large Data Bases*, pages 574–584. Morgan Kaufmann.
- Brin, S. (1995b). Near neighbor search in large metric spaces. In *In Proceedings of the 21th International Conference on Very Large Data Bases*, pages 574–584. Morgan Kaufmann Publishers.
- Broadus, R. N. (1987). Early approaches to bibliometrics. *Journal of the American Society for Information Science*, **38**(2), 127–129.
- Brönnimann, H., Melquiond, G., and Pionc, S. (2006). The design of the Boost interval arithmetic library. *Theoretical Computer Science*, **351**(1), 111–118.
- Bronselaer, A. and De Tré, G. (2010). Aspects of object merging. In *Proc. NAFIPS’10*, pages 1–6. IEEE, Toronto, ON.
- Bronselaer, A., Szymczak, M., Zadrozny, S., and De Tré, G. (2016). Dynamical order construction in data fusion. *Information Fusion*, **27**, 1–18.
- Brown, B. (1983). Statistical uses of the spatial median. *Journal of the Royal Statistical Society. Series B (Methodological)*, **45**(1), 25–30.
- Brumback, R. A. (2009). Impact Factor Wars: Episode V — The Empire strikes back. *Journal of Child Neurology*, **24**(3), 260–262.
- Brunelli, M. and Mezei, J. (2013). How different are ranking methods for fuzzy numbers? a numerical study. *International Journal of Approximate Reasoning*, **54**, 627–639.
- Buchholz, K. (1995). Criteria for the analysis of scientific quality. *Scientometrics*, **32**(2), 195–218.
- Buitinck, L., Louppe, G., Blondel, M., Pedregosa, F., Mueller, A., Grisel, O., Niculae, V., Prettenhofer, P., Gramfort, A., Grobler, J., Layton, R., VanderPlas, J., Joly, A., Holt, B., and Varoquaux, G. (2013). API design for machine learning software: experiences from the scikit-learn project. In *ECML PKDD Workshop: Languages for Data Mining and Machine Learning*, pages 108–122.
- Bulla, L. (1994). An index of evenness and its associated diversity measure. *Oikos*, **70**, 167–171.
- Bullen, P. (2003). *Handbook of Means and Their Inequalities*. Springer Science+Business Media, Dordrecht.
- Bunke, H. (1997). On a relation between graph edit distance and maximum common subgraph. *Pattern Recognition Letters*, **18**(8), 689–694.

- Bunke, H. and Riesen, K. (2011). Recent advances in graph-based pattern recognition with applications in document analysis. *Pattern Recognition*, **44**(5), 1057–1067.
- Bunke, H. and Shearer, K. (1998). A graph distance metric based on the maximal common subgraph. *Pattern Recognition Letters*, **19**(3–4), 255–259.
- Burrell, Q. L. (1992). A simple linear model for linked informetric processes. *Information Processing & Management*, **28**(5), 637–645.
- Burrell, Q. L. (1994). The Kolmogorov-Smirnov test and rank-frequency distributions. *Journal of the American Society for Information Science*, **45**(1), 59.
- Burrell, Q. L. (2001). Stochastic modelling of the first-citation distribution. *Scientometrics*, **52**(1), 3–12.
- Burrell, Q. L. (2003). Predicting future citation behavior. *Journal of the American Society for Information Science and Technology*, **54**(5), 372–378.
- Burrell, Q. L. (2005). Are “sleeping beauties” to be expected? *Scientometrics*, **65**(3), 381–389.
- Burrell, Q. L. (2006). The use of Lotka functions and systematic sampling. *Scientometrics*, **67**(2), 323–325.
- Burrell, Q. L. (2007a). Hirsch index of Hirsch rate? Some thoughts arising from Liang’s data. *Scientometrics*, **73**(1), 19–28.
- Burrell, Q. L. (2007b). Hirsch’s h -index: A stochastic model. *Journal of Informetrics*, **1**, 16–25.
- Burrell, Q. L. (2007c). On the h -index, the size of the Hirsch core and Jin’s A -index. *Journal of Informetrics*, **1**, 170–177.
- Burrell, Q. L. (2008a). The publication/citation process at the micro level: A case study. In Kretschmer, H. and Havemann, F., editors, *Proc. WIS 2008, 4th Intl. Conf. Webometrics, Informetrics and Scientometrics & 9th COLLNET Meeting*, Berlin, 2008a.
- Burrell, Q. L. (2008b). Some comments on “The estimation of lost multi-copy documents: A new type of informetrics theory” by Egghe and Proot. *Journal of Informetrics*, **2**, 101–105.
- Burrell, Q. L. (2008c). Extending Lotkaian informetrics. *Information Processing & Management*, **44**, 1794–1807.
- Burrell, Q. L. (2009). On Hirsch’s h , Egghe’s g and Kosmulski’s $h(2)$. *Scientometrics*, **79**(1), 323–325.
- Bustince, H., Barrenechea, E., and Pagola, M. (2008). Relationship between restricted dissimilarity functions, restricted equivalence functions and normal e_N -functions: Image thresholding invariant. *Pattern Recognition Letters*, **29**(4), 525–536.
- Bustince, H., Fernandez, J., Mesiar, R., Pradera, A., and Beliakov, G. (2011). Restricted dissimilarity functions and penalty functions. In Galichet, S. et al., editors, *Proc. Eusflat/LFA’11*, pages 79–85.
- Bustince, H., Barrenechea, E., Calvo, T., James, S., and Beliakov, G. (2014a). Consensus in multi-expert decision making problems using penalty functions defined over a cartesian product of lattices. *Information Fusion*, **17**, 56–64.
- Bustince, H., Fernandez, J., Kolesárová, A., and Mesiar, R. (2014b). Fusion functions and directional monotonicity. *Communications in Computer and Information Science*, **444**, 262–268.
- Bustince, H., Fernandez, J., Kolesárová, A., and Mesiar, R. (2015). Directional monotonicity of fusion functions. *European Journal of Operational Research*, **244**(1), 300–308.
- Bustince, H., Beliakov, G., Dimuro, G. P., Bedregal, B., and Mesiar, R. (2017). On the definition of penalty functions in data aggregation. *Fuzzy Sets and Systems*, **323**, 1–18.
- Byrd, R. H., Nocedal, J., and Schnabel, R. B. (1994). Representations of quasi-Newton matrices and their use in limited memory methods. *Mathematical Programming*, **63**(4), 129–156.
- Byrd, R., Lu, P., and Nocedal, J. (1995). A limited memory algorithm for bound constrained optimization. *SIAM Journal on Scientific and Statistical Computing*, **16**, 1190–1208.
- Báez-Sánchez, A., Moretti, A., and Rojas-Medar, M. (2012). On polygonal fuzzy sets and numbers. *Fuzzy Sets and Systems*, **209**, 54–65.

- Cabrerizo, F., Alonso, S., I.J.Pérez, and Herrera-Viedma, E. (2008). On consensus measures in fuzzy group decision making. *Lecture Notes in Artificial Intelligence*, **5285**, 86–97.
- Caliński, T. and Harabasz, J. (1974). A dendrite method for cluster analysis. *Communications in Statistics*, **3** (1), 1–27. doi:10.1080/03610927408827101.
- Calvo, T. and Beliakov, G. (2010). Aggregation functions based on penalties. *Fuzzy Sets and Systems*, **161**, 1420–1436.
- Calvo, T. and Mayor, G. (1999). Remarks on two types of extended aggregation functions. *Tatra Mountains Mathematical Publications*, **16**, 235–253.
- Calvo, T., Mayor, G., Torrens, J., Suner, J., Mas, M., and Carbonell, M. (2000). Generation of weighting triangles associated with aggregation functions. *International Journal of Uncertainty, Fuzziness and Knowledge-based Systems*, **8**(4), 417–451.
- Calvo, T., Kolesárová, A., Komorníková, M., and Mesiar, R. (2002a). Aggregation operators: Properties, classes and construction methods. In Calvo et al. (2002b), pages 3–104.
- Calvo, T., Mayor, G., and Mesiar, R., editors (2002b). *Aggregation operators. New trends and applications*, volume 97 of *Studies in Fuzziness and Soft Computing*. Physica-Verlag, New York.
- Calvo, T., Mesiar, R., and Yager, R. R. (2004). Quantitative weights and aggregation. *IEEE Transactions on Fuzzy Systems*, **12**(1), 62–69.
- Camargo, J. (1993). Must dominance increase with the number of subordinate species in competitive interactions? *Journal of Theoretical Biology*, **161**(4), 537–542.
- Campello, R. J. G. B., Moulavi, D., Zimek, A., and Sander, J. (2015). Hierarchical density estimates for data clustering, visualization, and outlier detection. *ACM Transactions on Knowledge Discovery from Data*, **10** (1), 5:1–5:51. doi:10.1145/2733381.
- Carbonell, M., Mas, M., and Mayor, G. (1997). On a class of monotonic extended owa operators. In *Proc. 6th IEEE International Conference on Fuzzy Systems (FUZZ-IEEE’97)*, volume 3, pages 1695–1700. IEEE, Barcelona, Spain.
- Cardin, M. (2011). Aggregation functionals on complete lattices. In Galichet, S. et al., editors, *Proc. Eusflat/LFA’11*, pages 86–89.
- Cardin, M. and Couceiro, M. (2011). Invariant functionals on completely distributive lattices. *Fuzzy Sets and Systems*, **167**(1), 45–56.
- Carlsson, C. and Fullér, R. (2001). On possibilistic mean value and variance of fuzzy numbers. *Fuzzy Sets and Systems*, **122**, 315–326.
- Carlsson, C., Fullér, R., and Majlender, P. (2004). Additions of completely correlated fuzzy numbers. In *Proc. FUZZ-IEEE’04*, pages 535–539, Budapest, Hungary, 2004. IEEE.
- Caruana, R. et al. (2015). Intelligible models for HealthCare: Predicting pneumonia risk and hospital 30-day readmission. In *Proc. KDD’15*, pages 1721–1730. ACM, Sydney, Australia.
- Castagnoli, G., Bräuer, S., and Herrmann, M. (1993). Optimization of cyclic redundancy-check codes with 24 and 32 parity bits. *IEEE Transactions on Communications*, **41**(6), 883–892.
- Cena, A. and Gagolewski, M. (2013a). OM3: Ordered maxitive, minitive, and modular aggregation operators – Part I: Axiomatic analysis under arity-dependence. In Bustince, H. et al., editors, *Aggregation Functions in Theory and in Practice*, volume 228 of *Advances in Intelligent Systems and Computing*, pages 93–103. Springer. doi:10.1007/978-3-642-39165-1_13.
- Cena, A. and Gagolewski, M. (2013b). OM3: Ordered maxitive, minitive, and modular aggregation operators – Part II: A simulation study. In Bustince, H. et al., editors, *Aggregation Functions in Theory and in Practice*, volume 228 of *Advances in Intelligent Systems and Computing*, pages 105–115. Springer. doi:10.1007/978-3-642-39165-1_14.
- Cena, A. and Gagolewski, M. (2015a). Clustering and aggregation of informetric data sets. In *Computational methods in data analysis (Proc. ITRIA’15 vol. 1)*, pages 5–26. Institute of Computer Science, Polish Academy of Sciences.

- Cena, A. and Gagolewski, M. (2015b). Aggregation and soft clustering of informetric data. In Baczyński, M., De Baets, B., and Mesiar, R., editors, *Proc. 8th International Summer School on Aggregation Operators (AGOP 2015)*, pages 79–84. University of Silesia, Katowice, Poland. ISBN 978-83-8012-519-3.
- Cena, A. and Gagolewski, M. (2015c). A K-means-like algorithm for informetric data clustering. In Alonso, J., Bustince, H., and Reformat, M., editors, *Proc. IFSA/EUSFLAT'15*, pages 536–543. Atlantis Press. doi:10.2991/ifsa-eusflat-15.2015.77.
- Cena, A. and Gagolewski, M. (2015d). OM3: Ordered maxitive, minitive, and modular aggregation operators – Axiomatic and probabilistic properties in an arity-monotonic setting. *Fuzzy Sets and Systems*, **264**, 138–159. doi:10.1016/j.fss.2014.04.001.
- Cena, A. and Gagolewski, M. (2016). Fuzzy k-minpen clustering and k-nearest-minpen classification procedures incorporating generic distance-based penalty minimizers. In Carvalho, J. et al., editors, *Information Processing and Management of Uncertainty in Knowledge-Based Systems, Part II*, volume 611 of *Communications in Computer and Information Science*, pages 445–456. Springer. doi:10.1007/978-3-319-40581-0_36.
- Cena, A. and Gagolewski, M. (2017). OWA-based linkage and the Genie correction for hierarchical clustering. In *Proc. FUZZ-IEEE'17*. IEEE. doi:10.1109/FUZZ-IEEE.2017.8015652. no. 8015652.
- Cena, A. and Gagolewski, M. (2020). Genie+OWA: Robustifying hierarchical clustering with OWA-based linkages. *Information Sciences*, **520**, 324–336. doi:10.1016/j.ins.2020.02.025.
- Cena, A., Gagolewski, M., and Mesiar, R. (2015). Problems and challenges of information resources producers' clustering. *Journal of Informetrics*, **9**(2). doi:10.1016/j.joi.2015.02.005.
- Cena, A., Gagolewski, M., Siudem, G., and Żogała Siudem, B. (2022). Validating citation models by proxy indices. *Journal of Informetrics*, **16**(2), 101267. doi:10.1016/j.joi.2022.101267.
- Cervone, D. P. et al. (2012). Voting with rubber bands, weights, and strings. *Mathematical Social Sciences*, **64**, 11–27.
- Chakerian, G. and Ghandehari, M. (1985). The Fermat problem in Minkowski spaces. *Geometriae Dedicata*, **17**, 227–238.
- Chakraborty, B. and Chaudhuri, P. (1996). On a transformation and re-transformation technique for constructing an affine equivariant multivariate median. *Proceedings of the American Mathematical Society*, **124**(8), 2539–2547.
- Chakravarty, S. (1990). *Ethical Social Index Numbers*. Springer-Verlag, New York.
- Chambers, J. (1998). *Programming with Data*. Springer-Verlag.
- Chambers, J. (2008). *Software for Data Analysis. Programming with R*. Springer-Verlag.
- Chambers, J. and Hastie, T. (1992). *Statistical Models in S*. Chapman & Hall.
- Chan, T. M. (1996). Optimal output-sensitive convex hull algorithms in two and three dimensions. *Discrete and Computational Geometry*, **16**, 361–368.
- Chan, T. M. (2004). An optimal randomized algorithm for maximum Tukey depth. In *Proc. 15th ACM-SIAM Symp. Discrete Algorithms (SODA)*, pages 430–436.
- Chanas, S. (2001). On the interval approximation of a fuzzy number. *Fuzzy Sets and Systems*, **122**, 353–356.
- Chandrasekaran, R. and Tamir, A. (1989). Open questions concerning Weiszfeld's algorithm for the Fermat-Weber location problem. *Mathematical Programming*, **44**, 293–295.
- Chandrashekar, G. and Sahin, F. (2014). A survey on feature selection methods. *Computers & Electrical Engineering*, **40**(1), 16–28.
- Chang, H. and Yeung, D. (2008). Robust path-based spectral clustering. *Pattern Recognition*, **41**(1), 191–203.
- Chaudhuri, P. and Sengupta, D. (1993). Sign tests in multidimension: Inference based on the geometry of the data cloud. *Journal of the American Statistical Association*, **88**(424), 1363–1370.
- Chavent, M. and Saracco, J. (2008). Central tendency and dispersion measures for intervals and hypercubes. *Communications in Statistics – Theory and methods*, **37**, 1471–1482.

- Chavez, E., Navarro, G., Baeza-Yates, R., and Marroquin, J. L. (2001). Searching in metric spaces. *ACM Computing Surveys*, **33**(3), 273–321.
- Chazelle, B. (1993). An optimal convex hull algorithm in any fixed dimension. *Discrete and Computational Geometry*, **10**(1), 377–409.
- Chen, C.-T. (2000). Extensions of the TOPSIS for group decision-making under fuzzy environment. *Fuzzy Sets and Systems*, **114**(1), 1–9.
- Chen, S.-J. and Hwang, C.-L. (1992). *Fuzzy Multiple Attribute Decision Making: Methods and Applications*. Springer, Berlin, Heidelberg.
- Chen, Y.-S. and Leimkuhler, F. F. (1986). A relationship between Lotka’s law, Bradford’s law, and Zipf’s law. *Journal of the American Society for Information Science*, **37**(5), 307–314.
- Chen, Y.-L. and Cheng, L.-C. (2009). Mining maximum consensus sequences from group ranking data. *European Journal of Operational Research*, **198**, 241–251.
- Chen, Z.-Z. and Wang, L. (2011). Fast exact algorithms for the closest string and substring problems with application to the planted (l, d) motif model. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, **8**(5), 1400–1410.
- Cheney, E. (1966). *Introduction to Approximation Theory*. McGraw-Hill.
- Cheng, Y. and Liu, N. C. (2006). A first approach to the classification of the top 500 world universities by their disciplinary characteristics using scientometrics. *Scientometrics*, **68**(1), 135–150.
- Chenouri, S. and Small, C. G. (2012). A nonparametric multivariate multisample test based on data depth. *Electronic Journal of Statistics*, **6**, 760–782.
- Chiclana, F., Tapia García, J., del Moral, M., and Herrera-Viedma, E. (2013). A statistical comparative study of different similarity measures of consensus in group decision making. *Information Sciences*, **221**, 110–123.
- Chimani, M., Woste, M., and Böcker, S. (2011). A closer look at the closest string and closest substring problem. In *Proc. 13th Workshop Algorithm Engineering and Experiments (ALENEX’2011)*, pages 13–24.
- Chin, F. Y., Deng, X., Fang, Q., and Zhu, S. (2004). Approximate and dynamic rank aggregation. *Theoretical Computer Science*, **325**(3), 409–424.
- Choquet, G. (1954). Theory of capacities. *Annales de l’institut Fourier*, **5**, 131–295.
- Choulakian, V. and Stephens, M. A. (2001). Goodness-of-fit tests for the Generalized Pareto Distribution. *Technometrics*, **43**(4), 478–484.
- Chwałkowski, R. (2001). *Typografia typowej książki*. Helion, Gliwice.
- Clarkson, J. A. (1936). Uniformly convex spaces. *Transactions of the American Mathematical Society*, **40**, 396–414.
- Clopper, C. and Pearson, E. (1934). The use of confidence or fiducial limits illustrated in the case of the binomial. *Biometrika*, **26**, 404–413.
- Colomer, J. M., editor (2004). *Handbook of Electoral System Choice*. Palgrave Macmillan, London.
- Contini, S., Steinfeld, R., Pieprzyk, J., , and Matusiewicz, K. (2007). A critical look at cryptographic hash function literature. In *ECRYPT Hash Workshop, 2007*.
- Conway, J. H. and Sloane, N. J. A. (1998). *Sphere Packings, Lattices and Groups*. Springer-Verlag, New York.
- Coppersmith, D., Fleischer, L., and Rudra, A. (2006). Ordering by weighted number of wins gives a good ranking for weighted tournaments. In *Proc. 17th Annual ACM-SIAM Symp. Discrete Algorithms (SODA’06)*, pages 776–782.
- Coroianu, L. (2011). Best Lipschitz constant of the trapezoidal approximation operator preserving the expected interval. *Fuzzy Sets and Systems*, **165**(1), 81–97.
- Coroianu, L. (2012). Lipschitz functions and fuzzy number approximations. *Fuzzy Sets and Systems*, **200**, 116–135.

- Coroianu, L. (2013). *Fuzzy Approximation Operators*. PhD thesis, Babeş-Bolyai University, Cluj-Napoca, Romania.
- Coroianu, L. (2016). Necessary and sufficient conditions for the equality of the interactive and non-interactive sums of two fuzzy numbers. *Fuzzy Sets and Systems*, **283**, 40–55.
- Coroianu, L. and Fullér, R. (2013). On multiplication of interactive fuzzy numbers. In *Proc. IEEE Intl. Symp. Intelligent Systems and Informatics (SISY'13)*, pages 181–185.
- Coroianu, L. and Gagolewski, M. (2019). Penalty-based data aggregation in real normed vector spaces. In Halaš, R. et al., editors, *New Trends in Aggregation Theory*, volume 981 of *Advances in Intelligent Systems and Computing*, pages 160–171. Springer. doi:10.1007/978-3-030-19494-9_15.
- Coroianu, L., Gagolewski, M., and Grzegorzewski, P. (2013). Nearest piecewise linear approximation of fuzzy numbers. *Fuzzy Sets and Systems*, **233**, 26–51. doi:10.1016/j.fss.2013.02.005. URL <https://CRAN.R-project.org/package=FuzzyNumbers>.
- Coroianu, L., Gagolewski, M., Grzegorzewski, P., Adabitabar Firozja, M., and Houlari, T. (2014a). Piecewise linear approximation of fuzzy numbers preserving the support and core. In Laurent, A. et al., editors, *Information Processing and Management of Uncertainty in Knowledge-Based Systems, Part II*, volume 443 of *Communications in Computer and Information Science*, pages 244–254. Springer. doi:10.1007/978-3-319-08855-6_25.
- Coroianu, L., Gal, S. G., and Bede, B. (2014b). Approximation of fuzzy numbers by max-product Bernstein operators. *Fuzzy Sets and Systems*, **257**, 41–66.
- Coroianu, L., Gagolewski, M., and Grzegorzewski, P. (2019). Piecewise linear approximation of fuzzy numbers: Algorithms, arithmetic operations and stability of characteristics. *Soft Computing*, **23**(19), 9491–9505. doi:10.1007/s00500-019-03800-2. URL <https://CRAN.R-project.org/package=FuzzyNumbers>.
- Coroianu, L., Fullér, R., Gagolewski, M., and James, S. (2020). Constrained ordered weighted averaging aggregation with multiple comonotone constraints. *Fuzzy Sets and Systems*, **395**, 21–39. doi:10.1016/j.fss.2019.09.006.
- Costas, R., van Leeuwen, T., and Bordons, M. (2010). A bibliometric classificatory approach for the study and assessment of research performance at the individual level: The effects of age on productivity and impact. *Journal of the American Society for Information Science and Technology*, **61**, 1564–1581.
- Costas, R. and Bordons, M. (2007). The *h*-index: Advantages, limitations and its relation with other bibliometric indicators at the micro level. *Journal of Informetrics*, **1**, 193–203.
- Costas, R. and Bordons, M. (2008). Is *g*-index better than *h*-index? An exploratory study at the individual level. *Scientometrics*, **77**(2), 267–288.
- Couceiro, M. and Marichal, J.-L. (2010). Characterizations of discrete Sugeno integrals as polynomial functions over distributive lattices. *Fuzzy Sets and Systems*, **161**, 694–707.
- Craig, A. T. and Hogg, R. V. (1978). *Intorudtion to Mathematical Statistics*. Macmillan Publishing Co., Inc., New York.
- Cramér, H. (1946). *Mathematical methods of statistics*. Princeton University Press, Princeton.
- Crawley, M. (2005). *Statistics: An Introduction Using R*. John Wiley & Sons.
- Crawley, M. (2007). *The R Book*. John Wiley & Sons.
- Cronin, B. (1998). Metatheorizing citation. *Scientometrics*, **43**(1), 45–55.
- Crouse, D. F. (2016). On implementing 2D rectangular assignment algorithms. *IEEE Transactions on Aerospace and Electronic Systems*, **52**(4), 1679–1696. doi:10.1109/TAES.2016.140952.
- Curtin, R. R., Edel, M., Lozhnikov, M., Mentekidis, Y., Ghaisas, S., and Zhang, S. (2018). mlpack 3: A fast, flexible machine learning library. *Journal of Open Source Software*, **3**(26), 726. doi:10.21105/joss.00726.
- Ćwik, J. and Mielniczuk, J. (2009). *Statystyczne systemy uczące się. Ćwiczenia w oparciu o pakiet R*. OW Politechniki Warszawskiej, Warszawa.
- Czogala, E. and Drewniak, J. (1984). Associative monotonic operations in fuzzy set theory. *Fuzzy Sets and Systems*, **12**, 249–269.

- da Costa Pereira, C., Dragoni, M., and Pasi, G. (2012). Multidimensional relevance: Prioritized aggregation in a personalized Information Retrieval setting. *Information Processing & Management*, **48**(2), 340–357.
- Dalgaard, P. (2008). *Introductory Statistics with R*. Springer-Verlag.
- Damerau, F. J. (1964). A technique for computer detection and correction of spelling errors. *Communications of the ACM*, **7**(3), 171–176.
- d’Angelo, C. A., Giuffrida, C., and Abramo, G. (2011). A heuristic approach to author name disambiguation in bibliometric databases for large-scale research assessments. *Journal of the American Society for Information Science and Technology*, **62**(2), 257–269.
- Daniels, H. and Velikova, M. (2010). Monotone and partially monotone neural networks. *IEEE Transactions on Neural Networks*, **21**(6), 906–917.
- Dantzig, G. (1963). *Linear Programming and Extensions*. Princeton University Press, Princeton.
- DasGupta, A. (2008). *Asymptotic theory of statistics and probability*. Springer-Verlag, New York.
- Dasgupta, M. and Deb, R. (1996). Transitivity and fuzzy preferences. *Social Choice and Welfare*, **13**, 305–318.
- Dasgupta, S. and Ng, V. (2009). Single data, multiple clusterings. In *Proc. NIPS Workshop Clustering: Science or Art? Towards Principled Approaches*. URL <https://clusteringtheory.org>.
- Dasu, T. and Johnson, T. (2003). *Exploratory Data Mining and Data Cleaning*. John Wiley & Sons, Inc.
- Datta, A., Sen, S., and Zick, Y. (2016). Algorithmic transparency via quantitative input influence. In *Proc. 37th IEEE Symposium on Security and Privacy*, pages 598–617.
- David, H. A. and Nagaraja, H. N. (2003). *Order statistics*. Wiley.
- Davies, D. L. and Bouldin, D. W. (1979). A cluster separation measure. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, **PAMI-1**(2), 224–227. doi:10.1109/TPAMI.1979.4766909.
- Davis, M., Whistler, K., and Scherer, M. (2014). Unicode Technical Standard #10, Unicode Collation Algorithm (revision 30). <http://www.unicode.org/reports/tr10/tr10-30.html>.
- Davis, P. M. (2009). Reward or persuasion? The battle to define the meaning of a citation. *Learned Publishing*, **21**, 5–11.
- De Baets, B. (2013). Aggregation 2.0. Plenary lecture slides, 7th International Summer School on Aggregation Operators (AGOP’13), Pamplona, Spain, July 16, 2013.
- De Baets, B. (2017). A monometric-based approach to data aggregation. Plenary lecture slides, 9th International Summer School on Aggregation Operators (AGOP’17), Skövde, Sweden, June 2017.
- De Baets, B. and Mesiar, R. (1999). Triangular norms on product lattices. *Fuzzy Sets and Systems*, **104**, 61–75.
- De Cooman, G. and Kerre, E. (1994). Order norms on bounded partially ordered sets. *Journal of Fuzzy Mathematics*, **2**, 281–310.
- de Finetti, B. (1931). Sul significato soggettivo della probabilità. *Fundamenta Mathematicæ*, **17**, 298–329.
- de la Rosa de Sáa, S., Gil, M. A., González-Rodríguez, G., López, M. T., and Lubiano, M. A. (2015). Fuzzy rating scale-based questionnaires and their statistical analysis. *IEEE Transactions on Fuzzy Systems*, **23**(1), 111–126.
- Dean, J. and Ghemawat, S. (2004). MapReduce: Simplified data processing on large clusters. In *Proc. Operating System Design and Implementation (OSDI)*, pages 137–150, San Francisco, CA, 2004.
- Decký, M., Mesiar, R., and Stupňanová, A. (2017). Deviation-based aggregation functions. *Fuzzy Sets and Systems*. in press, doi:10.1016/j.fss.2017.03.016.
- Deineko, V. G. and Woeginger, G. J. (2009). A new family of scientific impact measures: The generalized Kosmulski-indices. *Scientometrics*, **80**(3), 819–826.
- del Amo, A., Montero, J., and Molina, E. (2001). Representation of recursive rules. *European Journal of Operational Research*, **130**, 29–53.

- del Castillo, J. and Daoudi, J. (2009). Estimation of the Generalized Pareto Distribution. *Statistics and Probability Letters*, **79**, 684–688.
- Delgado, M., Verdegay, J., and Vila, M. (1993). On aggregation operations of linguistic labels. *International Journal of Intelligent Systems*, **8**(3), 351–370.
- Delgado, M., Vila, M., and Voxman, W. (1998). On a canonical representation of a fuzzy number. *Fuzzy Sets and Systems*, **93**, 125–135.
- Dementiev, R., Kettner, L., and Sanders, P. (2005). STXXL: Standard Template Library for XXL data sets. Technical Report 2005/18, Fakultät für Informatik, Universität Karlsruhe.
- Demirci, M. (2006). Aggregation operators on partially ordered sets and their categorical foundations. *Kybernetika*, **42**, 261–277.
- Deschrijver, G. (2011). Quasi-arithmetic means and OWA functions in interval-valued and Atanassov’s intuitionistic fuzzy set theory. In Galichet, S. et al., editors, *Proc. Eusflat/LFA’11*, pages 506–513.
- Deschrijver, G. and Kerre, E. E. (2003). On the relationship between some extensions of fuzzy set theory. *Fuzzy Sets and Systems*, **133**(2), 227–235.
- Destercke, S., Dubois, D., and Chojnacki, E. (2008a). Unifying practical uncertainty representations. I: Generalized p-boxes. *International Journal of Approximate Reasoning*, **49**(3), 649–664.
- Destercke, S., Dubois, D., and Chojnacki, E. (2008b). Unifying practical uncertainty representations. II: Clouds. *International Journal of Approximate Reasoning*, **49**(3), 664–677.
- Desu, M. M. and Rodine, R. H. (1969). Estimation of the population median. *Skandinavisk Aktuarietidskrift*, **28**, 67–70.
- Deza, M. M. and Deza, E. (2014). *Encyclopedia of Distances*. Springer.
- Diaconis, P. and Graham, R. (1977). Spearman’s footrule as a measure of disarray. *Journal of the Royal Statistical Society, Series B (Methodological)*, **39**(2), 262–268.
- Diaconis, P. and Shahshahani, M. (1987). The subgroup algorithm for generating uniform random variables. *Probability In Engineering And Information Sciences*, **1**, 15–32.
- Diamond, P. and Kloeden, P. (1994). *Metric spaces of fuzzy sets. Theory and applications*. World Scientific, Singapore.
- Didehvar, F. and Eslahchi, C. (2007). An algorithm for rank aggregation problem. *Applied Mathematics and Computation*, **189**(2), 1847–1858.
- Dinu, L. P. (2003). On the classification and aggregation of hierarchies with different constitutive elements. *Fundamenta Informaticæ*, **55**(1), 39–50.
- Dinu, L. P. and Ionescu, R.-T. (2012a). Clustering methods based on closest string via rank distance. In *14th Intl. Symp. Symbolic and Numeric Algorithms for Scientific Computing*, pages 207–213. IEEE.
- Dinu, L. P. and Ionescu, R.-T. (2012b). An efficient rank based approach for closest string and closest substring. *PLoS One*, **7**(6), e37576.
- Dinu, L. P. and Manea, F. (2006). An efficient approach for the rank aggregation problem. *Theoretical Computer Science*, **359**(1–3), 455–461.
- Dinu, L. P. and Popa, A. (2012). On the closest string via rank distance. *Lecture Notes in Computer Science*, **7354**, 413–426.
- Domingo-Ferrer, J. and Torra, V. (2003). Disclosure risk assessment in statistical microdata protection via advanced record linkage. *Statistics and Computing*, **13**, 343–354.
- Donoho, D. (1982). *Breakdown properties of multivariate location estimates*. PhD thesis, Department of Statistics, Harvard University.
- Donoho, D. L. and Gasko, M. (1992). Breakdown properties of location estimates based on halfspace depth and projected outlyingness. *The Annals of Statistics*, **20**(4), 1803–1827.

- Doshi-Velez, F. and Kim, B. (2017). Towards a rigorous science of interpretable machine learning. arXiv:1702.08608.
- Dua, D. and Graff, C. (2019). Uci machine learning repository. URL <http://archive.ics.uci.edu/ml>.
- Dubois, D. and Prade, H. (1978). Operations on fuzzy numbers. *Int. J. Syst. Sci.*, **9**, 613–626.
- Dubois, D. and Prade, H. (1987a). Fuzzy numbers: An overview. In *In: Analysis of Fuzzy Information. Mathematical Logic, vol. I*, pages 3–39. CRC Press.
- Dubois, D. and Prade, H. (1987b). The mean value of a fuzzy number. *Fuzzy Sets and Systems*, **24**, 279–300.
- Dubois, D. and Prade, H. (1980). *Fuzzy sets and systems. Theory and applications*. Academic Press, New York.
- Dubois, D. and Prade, H. (1985). A review of fuzzy set aggregation connectives. *Information Sciences*, **39**, 85–121.
- Dubois, D. and Prade, H. (1996). Semantics of quotient operators in fuzzy relational databases. *Fuzzy Sets and Systems*, **78**(1), 89–93.
- Dubois, D. and Prade, H. (2001). Possibility theory, probability theory and multiple-valued logics: A clarification. *Annals of Mathematics and Artificial Intelligence*, **32**, 35–66.
- Dubois, D. and Prade, H. (2004). On the use of aggregation operations in information fusion processes. *Fuzzy Sets and Systems*, **142**, 143–161.
- Dubois, D. and Prade, H. (2009). Formal representations of uncertainty. In Bouyssou, D., Dubois, D., Pirlot, M., and Prade, H., editors, *Decision-making process*, chapter 3. ISTE, London, UK.
- Dubois, D., Prade, H., and Testemale, C. (1988). Weighted fuzzy pattern matching. *Fuzzy Sets and Systems*, **28**, 313–331.
- Dubois, D., Fargier, H., and Prade, H. (1996). Refinements of the maximin approach to decision-making in a fuzzy environment. *Fuzzy Sets and Systems*, **81**, 103–122.
- Dubois, D., Kerre, E., Mesiar, R., and Prade, H. (2000). Fuzzy interval analysis. In Dubois, D. and Prade, H., editors, *Fundamentals of fuzzy sets*, pages 483–581. Kluwer, Boston, Mass.
- Dubois, D., Fortemps, P., Pirlot, M., and Prade, H. (2001). Leximin optimality and fuzzy set theoretic operations. *European Journal of Operational Research*, **130**(1), 20–28.
- Dubois, D., Prade, H., and Smets, P. (2008). A definition of subjective possibility. *International Journal of Approximate Reasoning*, **48**(2), 352–364.
- Dujmović, J. J. (1974a). Two integrals related to means. *Publikacije Elektrotehničkog Fakulteta Univerziteta u Beogradu*, **412–460**(457), 231–232.
- Dujmović, J. J. (1974b). Weighted conjunctive and disjunctive means and their application in system evaluation. *Publikacije Elektrotehničkog Fakulteta Univerziteta u Beogradu*, **461–497**(483), 147–158.
- Dukhovny, A. (2007). Lattice polynomials of random variables. *Statistics and Probability Letters*, **77**, 989–994.
- Dunn, J. (1974). A fuzzy relative of the ISODATA process and its use in detecting compact well-separated clusters. *Journal of Cybernetics*, **3**(3), 32–57. doi:10.1080/01969727308546046.
- Durante, F., Mesiar, R., Papini, P. L., and Sempi, C. (2007). 2-increasing binary aggregation operators. *Information Sciences*, **177**, 111–129.
- Durier, R. (1994). The Fermat–Weber problem and inner-product spaces. *Journal of Approximation Theory*, **78**(2), 161–173.
- Durier, R. (1997). Optimal locations and inner products. *Journal of Mathematical Analysis and Applications*, **207**, 220–239.
- Durier, R. and Michelot, C. (1985). Geometrical properties of the Fermat–Weber problem. *European Journal of Operational Research*, **20**, 332–343.
- Durocher, S., Fraser, R., Leblanc, A., Morrison, J., and Skala, M. (2014). On combinatorial depth measures. In *Proc. 26th Canadian Conf. Computational Geometry*, pages 206–211.

- Dutta, B. (2002). Inequality, poverty and welfare. In Arrow, K., Sen, A., and Suzumura, K., editors, *Handbook of Social Choice and Welfare*, pages 597–633. Elsevier.
- Dwork, C., Kumar, R., Naor, M., and Sivakumar, D. (2001). Rank aggregation methods for the web. In *Proceedings of the 10th International Conference on World Wide Web*, pages 613–622. ACM.
- Dyckerhoff, R., Koshevoy, G., and Mosler, K. (1996). Zonoid data depth: Theory and computation. In Prat, A. et al., editors, *Proc. COMPSTAT 1996*, pages 235–240. Physica-Verlag, Heidelberg.
- Eaton, M. L. (1983). *Multivariate Statistics*. Wiley, New York.
- Eckhardt, U. (1980). Weber’s problem and Weiszfeld’s algorithm in general spaces. *Mathematical Programming*, **18**, 186–196.
- Eddelbuettel, D. (2013). *Seamless R and C++ Integration with Rcpp*. Springer, New York.
- Eddelbuettel, D. and François, R. (2011). Rcpp: Seamless R and C++ integration. *Journal of Statistical Software*, **40**(8), 1–18.
- Eddy, W. (1982). Convex hull peeling. In *Proc. COMPSTAT’82*, pages 42–47. Physica-Verlag, Vienna.
- Edelsbrunner, H. (1987). *Algorithms in Combinatorial Geometry*. Springer-Verlag, Heidelberg.
- Edwards, A. W. F. and Cavalli-Sforza, L. L. (1965). A method for cluster analysis. *Biometrics*, **21**(2), 362–375. doi:10.2307/2528096.
- Egghe, L. (1987). Pratt’s measure for some bibliometric distributions and its relation with the 80/20 rule. *Journal of the American Society for Information Science*, **38**(4), 288–297.
- Egghe, L. (1998). Mathematical theories of citation. *Scientometrics*, **43**(1), 57–62.
- Egghe, L. (2005). Relations between the continuous and the discrete Lotka power function. *Journal of the American Society for Information Science and Technology*, **56**(7), 664–668.
- Egghe, L. (2006a). An improvement of the h -index: the g -index. *ISSI Newsletter*, **2**(1), 8–9.
- Egghe, L. (2006b). Theory and practise of the g -index. *Scientometrics*, **69**(1), 131–152.
- Egghe, L. (2007). Item-time-dependent Lotkaian informetrics and applications to the calculation of the time-dependent h -index and g -index. *Mathematical and Computer Modelling*, **45**, 864–872.
- Egghe, L. (2008a). The influence of merging on h -type indices. *Journal of Informetrics*, **2**(3), 252–262.
- Egghe, L. (2008b). Examples of simple transformations of the h -index: Qualitative and quantitative conclusions and consequences for other indices. *Journal of Informetrics*, **2**, 136–148.
- Egghe, L. (2008c). Modelling successive h -indices. *Scientometrics*, **77**(3), 377–387.
- Egghe, L. (2009a). Mathematical study of h -index sequences. *Information Processing and Management*, **45**(2), 288–297.
- Egghe, L. (2009b). Performance and its relation with productivity in Lotkaian systems. *Scientometrics*, **81**(2), 567–585.
- Egghe, L. (2009c). Time-dependent Lotkaian informetrics incorporating growth of sources and items. *Mathematical and Computer Modelling*, **49**(1–2), 31–37.
- Egghe, L. (2010a). The Hirsch index and related impact measures. *Annual Review of Information Science and Technology*, **44**, 65–114.
- Egghe, L. (2010b). Influence of adding or deleting items and sources on the h -index. *Journal of the American Society for Information Science and Technology*, **61**(2), 370–373.
- Egghe, L. and Rousseau, R. (2006). An informetric model for the Hirsch-index. *Scientometrics*, **69**(1), 121–129.
- Ehrenfeucht, A. and Haussler, D. (1988). A new distance metric on strings computable in linear time. *Discrete Applied Mathematics*, **20**, 191–203.
- Elbassioni, K. and Tiwary, H. R. (2009). Complexity of approximating the vertex centroid of a polyhedron. *Lecture Notes in Computer Science*, **5878**, 413–422.

- Elbassioni, K. and Tiwary, H. R. (2012). Complexity of approximating the vertex centroid of a polyhedron. *Theoretical Computer Science*, **421**, 56–61.
- Elidan, G. (2013). Copulas in machine learning. In Jaworski, P., Durante, F., and Härdle, W., editors, *Copulae in Mathematical and Quantitative Finance*, pages 39–60. Springer.
- Ester, M., Kriegel, H.-P., Sander, J., and Xu, X. (1996). A density-based algorithm for discovering clusters in large spatial databases with noise. In *Proc. KDD'96*, pages 226–231.
- Eto, H. (2008). Scientometric definition of science: In what respect is the humanities more scientific than mathematical and social sciences? *Scientometrics*, **76**(1), 23–42.
- Even, Y. and Lehrer, E. (2014). Decomposition-integral: Unifying Choquet and the concave integrals. *Economic Theory*, **56**(1), 33–58.
- Everitt, B. and Hothorn, T. (2006). *A Handbook of Statistical Analyses Using R*. Chapman & Hall.
- Eysenck, H. and Eysenck, M. (2003). *Podpatrywanie umysłu*. GWP, Gdańsk.
- Facchinetti, G. and Ricci, R. G. (2004). A characterization of a general class of ranking functions on triangular fuzzy numbers. *Fuzzy Sets and Systems*, **146**(2), 297–312.
- Fan, K. (1943). Entfernung zweier zufälligen Größen und die Konvergenz nach Wahrscheinlichkeit. *Mathematische Zeitschrift*, **49**, 681–683.
- Fernández, M.-L. and Valiente, G. (2001). A graph distance metric combining maximum common subgraph and minimum common supergraph. *Pattern Recognition Letters*, **22**(6–7), 753–758.
- Fernández Salido, J. and Murakami, S. (2003). Extending Yager’s orness concept for the OWA aggregators to other mean operators. *Fuzzy Sets and Systems*, **139**(3), 515–542.
- Ferraro, M. B., Giordani, P., Vantaggi, B., Gagolewski, M., Ángeles Gil, M., Grzegorzewski, P., and Hryniewicz, O., editors (2017). *Soft Methods for Data Science*, volume 456 of *Advances in Intelligent Systems and Computing*. Springer. ISBN 978-3-319-42971-7. doi:10.1007/978-3-319-42972-4.
- Fiala, D., Rousselot, F., and Jezek, K. (2008). PageRank for bibliographic networks. *Scientometrics*, **76**(1), 135–158.
- Field, C. and Ronchetti, E. (1990). *Small sample asymptotics*. Institute of Mathematical Statistics, Hayward, CA.
- Filev, D. and Yager, R. R. (1998). On the issue of obtaining OWA operator weights. *Fuzzy Sets and Systems*, **94**, 157–169.
- Fischer, K., Gärtner, B., and Kutz, M. (2003). Fast smallest-enclosing-ball computation in high dimensions. In *Proc. 11th European Symposium on Algorithms (ESA)*, pages 630–641.
- Fishburn, P. (1977). Condorcet social choice functions. *SIAM Journal on Applied Mathematics*, **33**(3), 469–489.
- Fishburn, P. C. (1974). Lexicographic orders, utilities and decision rules: A survey. *Management Science*, **20**(11), 1442–1471.
- Fisher, N. (1993). *Statistical Analysis of Circular Data*. Cambridge University Press.
- Fisher, R. (1922). On the mathematical foundations of theoretical statistics. *Philosophical Transactions of the Royal Society A*, **222**, 309–368.
- Fisher, R. (1918). The correlation between relatives on the supposition of Mendelian inheritance. *Philosophical Transactions of the Royal Society of Edinburgh*, **52**, 399–433.
- Fisher, R. A. and Yates, F. (1938). *Statistical tables for biological, agricultural and medical research*. Oliver & Boyd, London.
- Floyd, R. and Rivest, R. (1975). Expected time bounds for selection. *Communications of the ACM*, **18**(3), 165–172.
- Fodor, J. and de Baets, B. (2008). Fuzzy preference modelling: Fundamentals and recent advances. In Bustince, H. et al., editors, *Fuzzy Sets and Their Extensions: Representation, Aggregation and Models*, pages 207–217. Springer-Verlag.

- Fodor, J. and Roubens, M. (1994). *Fuzzy Preference Modelling and Multicriteria Decision Support*. Springer.
- Fodor, J., Marichal, J.-L., and Roubens, M. (1995). Characterization of the Ordered Weighted Averaging operators. *IEEE Transactions on Fuzzy Systems*, **3**(2), 236–240.
- Fodor, J. C. and Marichal, J.-L. (1997). On nonstrict means. *Æquationes Mathematicæ*, **54**(3), 308–327.
- Fodor, J. (1996). An extension of Fung-Fu’s theorem. *International Journal of Uncertainty, Fuzziness and Knowledge-based Systems*, **4**(3), 235–243.
- Foley, J., van Dam, A., Feiner, S., Hughes, J., and Phillips, R. (2001). *Wprowadzenie do grafiki komputerowej*. WNT, Warszawa.
- Forgy, E. (1965). Cluster analysis of multivariate data: efficiency versus interpretability of classifications. *Biometrics*, **21**, 768–769.
- Fowlkes, E. and Mallows, C. (1983). A method for comparing two hierarchical clusterings. *Journal of the American Statistical Association*, **78**(383), 553–569.
- Frances, M. and Litman, A. (1997). On covering problems of codes. *Theory of Computing Systems*, **30**(2), 113–119.
- Franceschet, M. (2010). A comparison of bibliometric indicators for computer science scholars and journals on *Web of Science* and *Google Scholar*. *Scientometrics*, **83**(1), 243–258.
- Franceschini, F. and Maisano, D. A. (2009). The Hirsch index in manufacturing and quality engineering. *Quality and Reliability Engineering International*, **25**, 987–995.
- Franceschini, F. and Maisano, D. A. (2010). Analysis of the Hirsch index’s operational properties. *European Journal of Operational Research*, **203**(2), 494–504.
- Franceschini, F. and Maisano, D. A. (2011). Structured evaluation of the scientific output of academic research groups by recent *h*-based indicators. *Journal of Informetrics*, **5**, 64–74.
- Frank, A. and Asuncion, A. (2013). UCI machine learning repository. archive.ics.uci.edu/ml.
- Frank, M. (1979). On the simultaneous associativity of $f(x, y)$ and $x + y - f(x, y)$. *Æquationes Mathematicæ*, **121–144**, 19.
- Fraser, A. (1957). Simulation of genetic systems by automatic digital computers. I. Introduction. *Australian Journal of Biological Sciences*, **10**, 484–491.
- Fraser, A. and Burnell, D. (1970). *Computer Models in Genetics*. McGraw-Hill, New York.
- Friedl, J. (2001). *Wyrażenia regularne*. Helion, Gliwice.
- Friedman, J. H. and Meulman, J. J. (2004). Clustering objects on subsets of attributes. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, **66**(4), 815–849.
- Fränti, P. and Sieranoja, S. (2018). K-means properties on six clustering benchmark datasets. *Applied Intelligence*, **48**(12), 4743–4759.
- Fränti, P. and Virtajoki, O. (2006). Iterative shrinking method for clustering problems. *Pattern Recognition*, **39**(5), 761–765.
- Fränti, P., Mariescu-Istodor, R., and Zhong, C. (2016). XNN graph. *Lecture Notes in Computer Science*, **10029**, 207–217. doi:10.1007/978-3-319-49055-7_19.
- Fu, L. and Medico, E. (2007). FLAME, a novel fuzzy clustering method for the analysis of DNA microarray data. *BMC bioinformatics*, **8**, 3.
- Fullér, R. and Majlender, P. (2003). On interactive fuzzy numbers. *Fuzzy Sets and Systems*, **143**, 355–369.
- Gagolewski, M. (2011a). Bibliometric impact assessment with R and the CITAN package. *Journal of Informetrics*, **5**(4), 678–692. doi:10.1016/j.joi.2011.06.006. URL <https://CRAN.R-project.org/package=CITAN>.
- Gagolewski, M. (2011b). *Aggregation operators and their application in a formal model for quality evaluation system of scientific research (Wybrane operatory agregacji i ich zastosowanie w modelu formalnym systemu jakości w nauce)*. PhD thesis, Systems Research Institute, Polish Academy of Sciences. in Polish.

- Gagolewski, M. (2012). On the relation between effort-dominating and symmetric minitive aggregation operators. In Greco, S. et al., editors, *Advances in Computational Intelligence, Part III*, volume 299 of *Communications in Computer and Information Science*, pages 276–285. Springer. doi:10.1007/978-3-642-31718-7_29.
- Gagolewski, M. (2013a). Statistical hypothesis test for the difference between Hirsch indices of two Pareto-distributed random samples. In Kruse, R. et al., editors, *Synergies of Soft Computing and Statistics for Intelligent Data Analysis*, volume 190 of *Advances in Intelligent Systems and Computing*, pages 359–367. Springer. doi:10.1007/978-3-642-33042-1_39.
- Gagolewski, M. (2013b). Scientific impact assessment cannot be fair. *Journal of Informetrics*, **7**(4), 792–802. doi:10.1016/j.joi.2013.07.001.
- Gagolewski, M. (2013c). On the relationship between symmetric maxitive, minitive, and modular aggregation operators. *Information Sciences*, **221**, 170–180. doi:10.1016/j.ins.2012.09.005.
- Gagolewski, M. (2014). *Programowanie w języku R. Analiza danych, obliczenia, symulacje (R Programming. Data Analysis, Computing, Simulations)*. Wydawnictwo Naukowe PWN, Warsaw, Poland, 1st edition. ISBN 978-83-01-17461-3. in Polish.
- Gagolewski, M. (2015a). *Data Fusion: Theory, Methods, and Applications*. Institute of Computer Science, Polish Academy of Sciences, Warsaw, Poland. ISBN 978-83-63159-20-7.
- Gagolewski, M. (2015b). Sugeno integral-based confidence intervals for the theoretical h-index. In Grzegorzewski, P. et al., editors, *Strengthening Links Between Data Analysis and Soft Computing*, volume 315 of *Advances in Intelligent Systems and Computing*, pages 233–240. Springer. doi:10.1007/978-3-319-10765-3_28.
- Gagolewski, M. (2015c). Some issues in aggregation of multidimensional data. In Baczyński, M., De Baets, B., and Mesiar, R., editors, *Proc. 8th International Summer School on Aggregation Operators (AGOP 2015)*, pages 127–132. University of Silesia, Katowice, Poland. ISBN 978-83-8012-519-3.
- Gagolewski, M. (2015d). Normalized WD_p WAM and WD_p OWA spread measures. In Alonso, J., Bustince, H., and Reformat, M., editors, *Proc. IFSA/EUSFLAT'15*, pages 210–216. Atlantis Press. doi:10.2991/ifsaeusflat-15.2015.32.
- Gagolewski, M. (2015e). Spread measures and their relation to aggregation functions. *European Journal of Operational Research*, **241**(2), 469–477. doi:10.1016/j.ejor.2014.08.034.
- Gagolewski, M. (2016a). *Programowanie w języku R. Analiza danych, obliczenia, symulacje (R Programming. Data Analysis, Computing, Simulations)*. Wydawnictwo Naukowe PWN, Warsaw, Poland, 2nd edition. ISBN 978-83-01-18939-6. URL https://github.com/gagolews/Programowanie_w_jezyku_R/. in Polish.
- Gagolewski, M. (2016b). *Algorytmy i postawy programowania w języku C++ (Introduction to Algorithms and Programming in C++)*. open-access lecture notes, Warsaw, Poland. doi:10.5281/zenodo.6451054. URL <https://github.com/gagolews/aipp>. in Polish.
- Gagolewski, M. (2017). Penalty-based aggregation of multidimensional data. *Fuzzy Sets and Systems*, **325**, 4–20. doi:10.1016/j.fss.2016.12.009.
- Gagolewski, M. (2021). genieclust: Fast and robust hierarchical clustering. *SoftwareX*, **15**, 100722. doi:10.1016/j.softx.2021.100722. URL <https://genieclust.gagolewski.com>.
- Gagolewski, M. (2022a). *Lightweight Machine Learning Classics with R*. open-access lecture notes. doi:10.5281/zenodo.3679976. URL <https://lmlcr.gagolewski.com/>. v0.2.3.
- Gagolewski, M. (2022b). *Minimalist Data Wrangling with Python*. open-access textbook. doi:10.5281/zenodo.6451068. URL <https://datawranglingpy.gagolewski.com/>. v1.0.0.
- Gagolewski, M. (2022c). stringi: Fast and portable character string processing in R. *Journal of Statistical Software*, **103**(2), 1–59. doi:10.18637/jss.v103.i02. URL <https://stringi.gagolewski.com>.
- Gagolewski, M. and Grzegorzewski, P. (2009a). A geometric approach to the construction of scientific impact indices. *Scientometrics*, **81**(3), 617–634. doi:10.1007/s11192-008-2253-y.
- Gagolewski, M. and Grzegorzewski, P. (2009b). Possible and necessary h-indices. In Carvalho, J. P. et al., editors, *Proc. IFSA/EUSFLAT'09*, pages 1691–1695. IFSA.

- Gagolewski, M. and Grzegorzewski, P. (2009c). O pewnym uogólnieniu indeksu hirscha. In Kawalec, P. and Lipski, P., editors, *Kadry i infrastruktura nowoczesnej nauki: Teoria i praktyka, Proc. 1st Intl. Conf. Zarządzanie Nauką*, volume 2, pages 15–29. Wydawnictwo Lubelskiej Szkoły Biznesu, Lublin. ISBN 978-83-61671-12-1. in Polish.
- Gagolewski, M. and Grzegorzewski, P. (2010a). Arity-monotonic extended aggregation operators. In Hüllermeier, E. et al., editors, *Information Processing and Management of Uncertainty in Knowledge-Based Systems*, volume 80 of *Communications in Computer and Information Science*, pages 693–702. Springer. doi:10.1007/978-3-642-14055-6_73.
- Gagolewski, M. and Grzegorzewski, P. (2010b). Metody i problemy naukometrii (methods and problems of scientometrics). In Rowiński, T. and Tadeusiewicz, R., editors, *Psychologia i informatyka. Synergia i kontradycje*, pages 103–125. Wyd. UKSW, Warsaw, Poland. ISBN 978-83-707-2679-9. in Polish.
- Gagolewski, M. and Grzegorzewski, P. (2010c). S-statistics and their basic properties. In Borgelt, C. et al., editors, *Combining Soft Computing and Statistical Methods in Data Analysis*, volume 77 of *Advances in Intelligent and Soft Computing*, pages 281–288. Springer. doi:10.1007/978-3-642-14746-3_35.
- Gagolewski, M. and Grzegorzewski, P. (2011a). Axiomatic characterizations of (quasi-) L-statistics and S-statistics and the Producer Assessment Problem. In Galichet, S. et al., editors, *Proc. EUSFLAT/LFA'11*, pages 53–58. Atlantis Press. doi:10.2991/eusflat.2011.112.
- Gagolewski, M. and Grzegorzewski, P. (2011b). Possibilistic analysis of arity-monotonic aggregation operators and its relation to bibliometric impact assessment of individuals. *International Journal of Approximate Reasoning*, **52**(9), 1312–1324. doi:10.1016/j.ijar.2011.01.010.
- Gagolewski, M. and James, S. (2018). Fitting symmetric fuzzy measures for discrete Sugeno integration. In Kacprzyk, J. et al., editors, *Advances in Fuzzy Logic and Technology 2017*, volume 642 of *Advances in Intelligent Systems and Computing*, pages 104–116. Springer. doi:10.1007/978-3-319-66824-6_10.
- Gagolewski, M. and Lasek, J. (2015a). The use of fuzzy relations in the assessment of information resources producers' performance. In *Proc. 7th IEEE International Conference Intelligent Systems IS'2014, Vol. 2: Tools, Architectures, Systems, Applications*, volume 323 of *Advances in Intelligent Systems and Computing*, pages 289–300. Springer. doi:10.1007/978-3-319-11310-4_25.
- Gagolewski, M. and Lasek, J. (2015b). Learning experts' preferences from informetric data. In Alonso, J., Bustince, H., and Reformat, M., editors, *Proc. IFSA/EUSFLAT'15*, pages 484–491. Atlantis Press. doi:10.2991/ifsa-eusflat-15.2015.70.
- Gagolewski, M. and Mesiar, R. (2012). Aggregating different paper quality measures with a generalized h-index. *Journal of Informetrics*, **6**(4), 566–579. doi:10.1016/j.joi.2012.05.001.
- Gagolewski, M. and Mesiar, R. (2014). Monotone measures and universal integrals in a uniform framework for the scientific impact assessment problem. *Information Sciences*, **263**, 166–174. doi:10.1016/j.ins.2013.12.004.
- Gagolewski, M., Dębski, M., and Nowakiewicz, M. (2013). Efficient algorithm for computing certain graph-based monotone integrals: The l_p -indices. In Mesiar, R. and Bacigal, T., editors, *Proc. Uncertainty Modeling*, pages 17–23. STU Bratislava. ISBN ISBN:978-80-227-4067-8.
- Gagolewski, M., Bartoszek, M., and Cena, A. (2016a). *Przetwarzanie i analiza danych w języku Python (Data Processing and Analysis in Python)*. Wydawnictwo Naukowe PWN, Warsaw, Poland. ISBN 978-83-01-18940-2. URL https://github.com/gagolews/Analiza_danych_w_jezyku_Python. in Polish.
- Gagolewski, M., Bartoszek, M., and Cena, A. (2016b). Genie: A new, fast, and outlier-resistant hierarchical clustering algorithm. *Information Sciences*, **363**, 8–23. doi:10.1016/j.ins.2016.05.003. URL <https://genieclust.gagolewski.com>.
- Gagolewski, M., Cena, A., and Bartoszek, M. (2016c). Hierarchical clustering via penalty-based aggregation and the Genie approach. In Torra, V. et al., editors, *Modeling Decisions for Artificial Intelligence*, volume 9880 of *Lecture Notes in Artificial Intelligence*, pages 191–202. Springer. doi:10.1007/978-3-319-45656-0_16.
- Gagolewski, M., James, S., and Beliakov, G. (2019). Supervised learning to aggregate data with the Sugeno integral. *IEEE Transactions on Fuzzy Systems*, **27**(4), 810–815. doi:10.1109/TFUZZ.2019.2895565.
- Gagolewski, M., Pérez-Fernández, R., and De Baets, B. (2020). An inherent difficulty in the aggregation of multidimensional data. *IEEE Transactions on Fuzzy Systems*, **28**, 602–606. doi:10.1109/TFUZZ.2019.2908135.

- Gagolewski, M., Bartoszek, M., and Cena, A. (2021). Are cluster validity measures (in)valid? *Information Sciences*, **581**, 620–636. doi:10.1016/j.ins.2021.10.004. URL https://github.com/gagolews/optim_cvi.
- Gagolewski, M., Żogała Siudem, B., Siudem, G., and Cena, A. (2022). Ockham’s index of citation impact. *Scientometrics*, **127**, 2829–2845. doi:10.1007/s11192-022-04345-2.
- Gan, G., Ma, C., and Wu, J. (2007). *Data Clustering: Theory, Algorithms, and Applications*. ASA-SIAM Series on Statistics and Applied Probability, Philadelphia, Alexandria. ISBN 978-0-898716-23-8.
- Gao, X., Xiao, B., Tao, D., and Li, X. (2010). A survey of graph edit distance. *Pattern Analysis and Applications*, **13**(1), 113–129.
- García-Lapresta, J. L. and Pérez-Román, D. (2013). Consensus-based hierarchical agglomerative clustering in the context of weak orders. In *Proc. IFSA World Congress*, pages 1010–1015. Edmonton, Canada.
- García-Lapresta, J. and Pérez-Román, D. (2008). Some measures of consensus generated by distances on weak orders. In *Proc. XIV Congreso Español sobre Tecnologías y Lógica fuzzy*, pages 477–483. Cuencas Mineras.
- García-Lapresta, J., Lasso de la Vega, C., Marques Pereira, R., and Urrutia, A. (2015). A new class of fuzzy poverty measures. In *Proc. of IFSA/EUSFLAT’15*, pages 1140–1146. Atlantis Press.
- Garcia-Perez, M. (2009). A multidimensional extension to Hirsch’s h -index. *Scientometrics*, **81**(3), 779–785.
- García-Torres, M., Gómez-Vela, F., Melián-Batista, B., and Moreno-Vega, J. M. (2016). High-dimensional feature selection via feature grouping: A variable neighborhood search approach. *Information Sciences*, **326**, 102–118.
- Garfield, E. (1955). Citation indexes for science. *Science*, **122**(3159), 108–111.
- Garfield, E. (1964). Can citation indexing be automated? In Stevens, M. E., Giuliano, V. E., and Heilprin, L. B., editors, *Proc. Statistical Association Methods for Mechanized Documentation*, pages 189–192, Washington, 1964.
- Garfield, E. (1998). Random thoughts on citationology. Its theory and practice. *Scientometrics*, **43**(1), 69–76.
- Garfield, E. (2006). The history and meaning of the Journal Impact Factor. *Journal of American Medical Association*, **295**(1), 90–93.
- Garfield, E., Pudovkin, A. I., and Istomin, V. S. (2003). Why do we need algorithmic historiography? *Journal of the American Society for Information Science and Technology*, **54**(5), 400–412.
- Gärtner, B. (1999). Fast and robust smallest enclosing balls. *Lecture Notes in Computer Science*, **1643**, 325–338.
- Gärtner, B. and Schönherr, S. (2000). An efficient, exact, and generic quadratic programming solver for geometric optimization. In *Proc. 16th ACM Symposium on Computational Geometry*, pages 110–118.
- Gentle, J. (2003). *Random Number Generation and Monte Carlo Methods*. Springer-Verlag.
- Gentle, J. (2007). *Matrix Algebra*. Springer-Verlag.
- Gentle, J. (2009). *Computational Statistics*. Springer-Verlag.
- Gentleman, R. C., Carey, V. J., Bates, D. M., et al. (2004). Bioconductor: Open software development for computational biology and bioinformatics. *Genome Biology*, **5**, R80.
- Genz, A. and Malik, A. (1980). An adaptive algorithm for numeric integration over an n -dimensional rectangular region. *Journal of Computational and Applied Mathematics*, **6**(4), 295–302.
- Geras, A., Siudem, G., and Gagolewski, M. (2020). Should we introduce a dislike button for academic papers? *Journal of the Association for Information Science and Technology*, **71**(2), 221–229. doi:10.1002/ASI.24231.
- Geras, A., Siudem, G., and Gagolewski, M. (2022). Time to vote: Temporal clustering of user activity on Stack Overflow. *Journal of the Association for Information Science and Technology*. doi:10.1002/asi.24658. in press.
- Ghiselli Ricci, R. (2004). Finitely and absolutely non idempotent aggregation operators. *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*, **12**(2), 201–217.
- Ghiselli Ricci, R. (2009). Asymptotically idempotent aggregation operators. *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*, **17**(5), 611–631.

- Ghiselli Ricci, R. and Mesiar, R. (2011). Multi-attribute aggregation operators. *Fuzzy Sets and Systems*, **181**(1), 1–13.
- Ghosh, A., Chattopadhyay, N., and Chakrabarti, B. (2014). Inequality in societies, academic institutions and science journals: Gini and k -indices. *Physica A*, **410**, 30–34.
- Gil-Garcia, R. J., Badia-Contelles, J. M., and Pons-Porrata, A. (2006). A general framework for agglomerative hierarchical clustering algorithms. In *18th International Conference on Pattern Recognition (ICPR'06)*, volume 2, pages 569–572.
- Gini, C. (1912). *Variabilità e mutabilità*. C. Cuppini, Bologna.
- Gionis, A., Mannila, H., and Tsaparas, P. (2007). Clustering aggregation. *ACM Transactions on Knowledge Discovery from Data*, **1**(1), 4.
- Glänzel, W. (2006a). On the h -index — A mathematical approach to a new measure of publication activity and citation impact. *Scientometrics*, **67**(2), 315–321.
- Glänzel, W. (2006b). On the opportunities and limitations of the H-index. *Science Focus*, **1**(1), 10–11.
- Glänzel, W. (2007). Some new applications of the h -index. *ISSI Newsletter*, **3**(2), 28–31.
- Glänzel, W. (2008a). Seven myths in bibliometrics. About facts and fiction in quantitative science studies. *COLLNET Journal of Scientometrics and Information Management*, **2**(1), 9–17.
- Glänzel, W. (2008b). H-index concatenation. *Scientometrics*, **77**(2), 369–372.
- Glänzel, W. (2008c). On some new bibliometric applications of statistics related to the h -index. *Scientometrics*, **77**(1), 187–196.
- Glänzel, W. and Persson, O. (2005). H-index for prize medalists. *ISSI Newsletter*, **1**(4), 15–18.
- Godo, L. and Torra, V. (2000). On aggregation operators for ordinal qualitative information. *IEEE Transactions on Fuzzy Systems*, **8**(2), 143–154.
- Goldberg, D. (1991). What every computer scientist should know about floating-point arithmetic. *ACM Computing Surveys*, **21**(1), 5–48.
- Goldfarb, D. and Idnani, A. (1983). A numerically stable dual method for solving strictly convex quadratic programs. *Mathematical Programming*, **27**, 1–33.
- Golub, T. et al. (1999). Molecular classification of cancer: Class discovery and class prediction by gene expression monitoring. *Science*, **286**, 531–537.
- González-Barrios, J. M. and Quiroz, A. J. (2003). A clustering procedure based on the comparison between the k nearest neighbors graph and the minimal spanning tree. *Statistics & Probability Letters*, **62**(1), 23–34.
- Gonzalez-Pereira, B., Guerrero-Bote, V. P., and de Moya-Anegón, F. (2010). A new approach to the metric of journals’ scientific prestige: The SJR indicator. *Journal of Informetrics*, **4**(3), 379–391.
- Goodman, B. and Flaxman, S. (2016). EU regulations on algorithmic decision-making and a “right to explanation”. In *Proc. ICML Workshop on Human Interpretability of Machine Learning’16*. New York.
- Gosselin, F. (2001). Lorenz partial order: The best known logical framework to define evenness indices. *Community Ecology*, **2**(2), 197–207.
- Gower, J. C. (1974). Algorithm AS 78: The Mediancentre. *Journal of the Royal Statistical Society. Series C (Applied Statistics)*, **23**(3), 466–470.
- Gower, J. C. and Ross, G. J. S. (1969). Minimum spanning trees and single linkage cluster analysis. *Journal of the Royal Statistical Society. Series C (Applied Statistics)*, **18**(1), 54–64.
- Gower, J. (1967). A comparison of some methods of cluster analysis. *Biometrics*, **23**(4), 623–637.
- Grabisch, M. (1997a). k -order additive discrete fuzzy measures and their representation. *Fuzzy Sets and Systems*, **92**, 167–189.
- Grabisch, M. (1997b). k -order additive discrete fuzzy measures and their representation. *Fuzzy Sets and Systems*, **92**(167–189).

- Grabisch, M. (2000). A graphical interpretation of the Choquet integral. *IEEE Transactions on Fuzzy Systems*, **8**(5), 627–631.
- Grabisch, M. (2003). The symmetric Sugeno integral. *Fuzzy Sets and Systems*, **139**, 473–490.
- Grabisch, M. (2008). How to score alternatives when criteria are scored on an ordinal scale. *Journal of Multi-Criteria Decision Analysis*, **15**, 31–44.
- Grabisch, M., Marichal, J.-L., Mesiar, R., and Pap, E. (2009). *Aggregation Functions*. Cambridge University Press.
- Grabisch, M., Marichal, J.-L., Mesiar, R., and Pap, E. (2011a). Aggregation functions: Means. *Information Sciences*, **181**, 1–22.
- Grabisch, M., Marichal, J.-L., Mesiar, R., and Pap, E. (2011b). Aggregation functions: Construction methods, conjunctive, disjunctive and mixed classes. *Information Sciences*, **181**, 23–43.
- Graham, R. L. (1972). An efficient algorithm for determining the convex hull of a finite planar set. *Information Processing Letters*, **1**, 132–133.
- Gramm, J., Niedermeier, R., and Rossmanith, P. (2003). Fixed-parameter algorithms for closest string and related problems. *Algorithmica*, **37**, 25–42.
- Graves, D. and Pedrycz, W. (2010). Kernel-based fuzzy clustering: A comparative experimental study. *Fuzzy Sets and Systems*, **161**, 522–543.
- Greco, S., Mesiar, R., and Rindone, F. (2014). Two new characterizations of universal integrals on the scale $[0, 1]$. *Information Sciences*, **267**, 217–224.
- Green, P. (1981). Peeling bivariate data. In Barnett, V., editor, *Interpreting multivariate data*. Wiley, New York.
- Groes, E., Jacobsen, H. J., Sloth, B., and Tranæs, T. (1998). Axiomatic characterizations of the Choquet integral. *Economic Theory*, **12**, 441–448.
- Gross, P. L. K. and Gross, E. M. (1927). College libraries and chemical education. *Science*, **66**(1713), 385–389.
- Grübel, R. (1996). Orthogonalization of multivariate location estimators: The orthomedian. *The Annals of Statistics*, **24**(4), 1457–1473.
- Grygorash, O., Zhou, Y., and Jorgensen, Z. (2006). Minimum spanning tree based clustering algorithms. In *Proc. ICTAI'06*, pages 1–9.
- Grzegorzewski, P. (1998). Metrics and orders in space of fuzzy numbers. *Fuzzy Sets and Systems*, **97**, 83–94.
- Grzegorzewski, P. (2010). Algorithms for trapezoidal approximations of fuzzy numbers preserving the expected interval. In et al, B.-M. B., editor, *Foundations of Reasoning Under Uncertainty*, pages 85–98. Springer.
- Grzegorzewski, P. and Pasternak-Winiarska, K. (2011). Trapezoidal approximations of fuzzy numbers with restrictions on the support and core. In *Proc. EUSFLAT/LFA 2011*, pages 749–756. Atlantis Press.
- Grzegorzewski, P. (2004). Distances between intuitionistic fuzzy sets and/or interval-valued fuzzy sets based on the Hausdorff metric. *Fuzzy Sets and Systems*, **148**(2), 319–328.
- Grzegorzewski, P. (2006). *Wspomaganie decyzji w warunkach niepewności. Metody statystyczne dla nieprecyzyjnych danych*. Exit, Warszawa.
- Grzegorzewski, P. (2013). Granular regression. In *Proc. IFSA/NAFIPS'13*, pages 974–979. Edmonton, Canada.
- Grzegorzewski, P. and Mrówka, E. (2005). Some notes on (Atanassov's) intuitionistic fuzzy sets. *Fuzzy Sets and Systems*, **156**, 492–495.
- Grzegorzewski, P. (2002). Nearest interval approximation of a fuzzy number. *Fuzzy Sets and Systems*, **130**(3), 321–330.
- Grzegorzewski, P. (2008). Trapezoidal approximations of fuzzy numbers preserving the expected interval – Algorithms and properties. *Fuzzy Sets and Systems*, **159**(11), 1354–1364.
- Grzegorzewski, P. and Mrówka, E. (2005). Trapezoidal approximations of fuzzy numbers. *Fuzzy Sets and Systems*, **153**(1), 115–135.

- Grzegorzewski, P. and Mrówka, E. (2007). Trapezoidal approximations of fuzzy numbers – Revisited. *Fuzzy Sets and Systems*, **158**(7), 757–768.
- Grzegorzewski, P., Gagolewski, M., and Bobeck-Wesołowska, K. (2014). *Wnioskowanie statystyczne z wykorzystaniem środowiska R (Statistical Inference with R)*. Politechnika Warszawska, Warsaw, Poland. ISBN 978-83-93-72601-1. in Polish.
- Grzegorzewski, P., Gagolewski, M., Hryniewicz, O., and Ángeles Gil, M., editors (2015). *Strengthening Links Between Data Analysis and Soft Computing*, volume 315 of *Advances in Intelligent Systems and Computing*. Springer. ISBN 978-3-319-10764-6. doi:10.1007/978-3-319-10765-3.
- Grąbczewski, K. (2014). *Meta-Learning in Decision Tree Induction*. Springer.
- Gu, T., Dolan-Gavitt, B., and Garg, S. (2017). BadNets: Identifying vulnerabilities in the machine learning model supply chain. arXiv:1708.06733.
- Guan, J. C. and Gao, X. (2009). Exploring the h -index at patent level. *Journal of the American Society for Information Science and Technology*, **60**(1), 35–40.
- Guerrini, L. (2005). An extension of Witzgall’s result on convex metrics. *Divulgaciones Matemáticas*, **13**(2), 83–89.
- Güngör, Z. and Ünler, A. (2007). K-harmonic means data clustering with simulated annealing heuristic. *Applied Mathematics and Computation*, **184**, 199–209.
- Guns, R. and Rousseau, R. (2009a). Simulating growth of the h -index. *Journal of the American Society for Information Science and Technology*, **60**(2), 410–417.
- Guns, R. and Rousseau, R. (2009b). Real and rational variants of the h -index and the g -index. *Journal of Informetrics*, **3**(1), 64–71.
- Gupta, B. M., Sharma, L., and Karisiddappa, C. R. (1995). Modelling the growth of papers in a scientific speciality. *Scientometrics*, **33**(2), 187–201.
- Gupta, M. et al. (2016). Monotonic calibrated interpolated look-up tables. *Journal of Machine Learning Research*, **17**(109), 1–47.
- Guyon, I. and Elisseeff, A. (2003). An introduction to variable and feature selection. *Journal of Machine Learning Research*, **3**, 1157–1182.
- Guyon, I., Nikravesh, M., Gunn, S., and Zadeh, L. A., editors (2006). *Feature Extraction: Foundations and Applications*. Springer.
- Górecki, J., Hofert, M., and Holeňa, M. (2015). An approach to structure determination and estimation of hierarchical archimedean copulas and its application in Bayesian classification. *Journal of Intelligent Information Systems*, pages 1–39.
- Halaš, R., Gagolewski, M., and Mesiar, R., editors (2019). *New Trends in Aggregation Theory*, volume 981 of *Advances in Intelligent Systems and Computing*. Springer. ISBN 978-3-030-19493-2. doi:10.1007/978-3-030-19494-9.
- Halmos, P. (1950). *Measure Theory*. Van Nostrand, New York.
- Hamming, R. W. (1950). Error detecting and error correcting codes. *Bell System Technical Journal*, **29**(2), 147–160.
- Hansen, N. (2006). The CMA evolution strategy: A comparing review. In Lozano, J., Larranga, P., Inza, I., and Bengoetxea, E., editors, *Towards a new evolutionary computation. Advances in estimation of distribution algorithms*, pages 75–102. Springer.
- Hanss, M. (2005). *Applied Fuzzy Arithmetic*. Springer.
- Harel, D. (2001). *Rzecz o istocie informatyki*. WNT, Warszawa.
- Hartman, E. (2000). Training feedforward neural networks with gain constraints. *Neural Computation*, **12**(4), 811–829.
- Harzing, A. W. K. and van der Wal, R. (2008). Google Scholar as a new source for citation analysis? *Ethics in Science and Environmental Politics*, **8**(1), 62–71.

- Harzing, A.-W. and von der Wall, R. (2009). A Google Scholar h -index for journals: An alternative metric to measure journal impact in economics and business. *Journal of the American Society for Information Science and Technology*, **60**(1), 41–46.
- Hastie, T., Tibshirani, R., and Friedman, J. (2013). *The Elements of Statistical Learning*. Springer.
- Hastie, T., Tibshirani, R., and Friedman, J. (2017). *The Elements of Statistical Learning: Data Mining, Inference, and Prediction*. Springer-Verlag.
- He, X. and Shi, P. (1998). Monotone b-spline smoothing. *Journal of the American Statistical Association*, **93**(442).
- Heip, C. (1974). A new index measuring evenness. *Journal of Marine Biological Association of the United Kingdom*, **54**(3), 555–557.
- Heller, M. (2009). *Jak być uczonym*. Znak, Kraków.
- Helmers, R. and Ruymgaart, F. H. (1988). Asymptotic normality of generalized L-statistics with unbounded scores. *Journal of Statistical Planning and Inference*, **19**, 43–53.
- Herrera, F., Herrera-Viedma, E., and Verdegay, J. (1996). Direct approach processes in group decision making using linguistic OWA operators. *Fuzzy Sets and Systems*, **79**(2), 175–190.
- Herrera, F., Herrera-Viedma, E., and Verdegay, J. (1997). A rational consensus model in group decision making using linguistic assessments. *Fuzzy Sets and Systems*, **88**(1), 31–49.
- Hettmansperger, T. P. and Randles, R. H. (2002). A practical affine equivariant multivariate median. *Biometrika*, **89**(4), 851–860.
- Higham, N. (2002). *Accuracy and Stability of Numerical Algorithms*. SIAM, Philadelphia.
- Higham, N. J. (1993). The accuracy of floating point summation. *SIAM Journal on Scientific Computing*, **14**(4), 783–799.
- Hilbert, D. (1891). Über die stetige Abbildung einer Linie auf ein Flächenstück. *Mathematische Annalen*, **38**, 459–460.
- Hinton, G., Vinyals, O., and Dean, J. (2015). Distilling the knowledge in a neural network. arXiv:13520.3051.
- Hirota, K. (1981). Concepts of probabilistic sets. *Fuzzy Sets and Systems*, **5**, 31–46.
- Hirsch, J. E. (2005). An index to quantify individual’s scientific research output. *Proceedings of the National Academy of Sciences*, **102**(46), 16569–16572.
- Hirsch, J. E. (2007). Does the h -index have predictive power? *Proceedings of the National Academy of Sciences*, **104**(49), 19193–19198.
- Hoare, C. (1961). Algorithm 65: Find. *Communications of the ACM*, **4**(7), 321–322.
- Hoeffding, W. (1963). Probability inequalities for sums of bounded random variables. *Journal of the American Statistical Association*, **58**(301), 13–30.
- Hoerl, A. and Kennard, R. (1970). Ridge regression: Biased estimation for nonorthogonal problems. *Technometrics*, **12**(1), 55–67.
- Hopcroft, J. and Ullman, J. (2003). *Wprowadzenie do teorii automatów, języków i obliczeń*. PWN, Warszawa.
- Hornik, K. and Murdoch, D. (2011). Watch your spelling! *The R Journal*, **3**(2), 22–28.
- Hornowska, E. (2007). *Testy psychologiczne. Teoria i praktyka*. Scholar, Warszawa.
- Hou, H., Kretschmer, H., and Liu, Z. (2008). The structure of scientific collaboration networks in *Scientometrics*. *Scientometrics*, **75**(2), 189–202.
- Hovden, R. (2013). Bibliometrics for internet media: Applying the h -index to YouTube. *Journal of the American Society for Information Science and Technology*, **64**(11), 2326–2331.
- Hryniewicz, O. (2008). Statistics with fuzzy data in statistical quality control. *Soft Computing*, **12**(3), 229–234.
- Hu, J., Shen, L., and Sun, G. (2017). Squeeze-and-excitation networks. arXiv:1709.01507.

- Huang, G.-B., Zhu, Q.-Y., and Siew, C.-K. (2006). Extreme learning machine: Theory and applications. *Neurocomputing*, **70**(1), 489–501.
- Huang, Y.-S., Liao, J.-T., and Lin, Z.-L. (2009). A study on aggregation of group decisions. *Systems Research and Behavioral Science*, **26**(4), 445–454.
- Huang, Y.-S., Chang, W.-C., and Lin, Z.-L. (2013). Aggregation of utility-based individual preferences for group decision-making. *European Journal of Operational Research*, **229**, 462–469.
- Huber, J. C. (2001). A new method for analyzing scientific productivity. *Journal of the American Society for Information Science and Technology*, **52**(13), 1089–1099.
- Huber, J. C. (2002). A new model that generates Lotka’s law. *Journal of the American Society for Information Science and Technology*, **53**(3), 209–219.
- Huber, P. J. (1972). The 1972 Wald lecture robust statistics: A review. *Annals of Mathematical Statistics*, **42**(4), 1041–1067.
- Huber, P. J. (1985). Projection pursuit. *The Annals of Statistics*, **13**(2), 435–475.
- Hubert, L. and Arabie, P. (1985). Comparing partitions. *Journal of Classification*, **2**(1), 193–218. doi:10.1007/BF01908075.
- Hufsky, F., Kuchenbecker, L., Jahn, K., Stoye, J., and Böcker, S. (2011). Swiftly computing center strings. *BMC Bioinformatics*, **12**, 106.
- Hwang, Y.-A. (2013). An axiomatization of the Hirsch-index without adopting monotonicity. *Applied Mathematics and Information Sciences*, **7**(4), 1317–1322.
- Hyndman, R. J. and Fan, Y. (1996). Sample quantiles in statistical packages. *The American Statistician*, **50**(4), 361–365.
- Hüllermeier, E. (2005). Cho-k-NN: A method for combining interacting pieces of evidence in case-based learning. In *Proc. IJCAI’05*.
- Hüllermeier, E. (2015). Does machine learning need fuzzy logic? *Fuzzy Sets and Systems*, **281**, 292–299.
- Ibáñez, A., Larrañaga, P., and Bielza, C. (2013). Cluster methods for assessing research performance: Exploring Spanish computer science. *Scientometrics*, **97**(3), 571–600.
- Inoue, J.-I., Ghosh, A., Chatterjee, A., and Chakrabarti, B. (2015). Measuring social inequality with quantitative methodology: Analytical estimates and empirical data analysis by gini and k indices. *Physica A*, **429**, 184–204.
- Irpino, A. and Verde, R. (2008). Dynamic clustering of interval data using a wasserstein-based distance. *Pattern Recognition Letters*, **29**(11), 1648–1658.
- Istrăţescu, V. I. (1987). *Inner Product Structures: Theory and Applications*. D. Reidel Publishing Company, Boston.
- Ivancheva, L. (2008). Scientometrics today: A methodological overview. In Kretschmer, H. and Havemann, F., editors, *Proc. WIS 2008, 4th Intl. Conf. Webometrics, Informetrics and Scientometrics & 9th COLLNET Meeting*, Berlin, 2008.
- Jacso, P. (2008). The plausability of computing the h -index of scholarly productivity and impact using reference-enhanced databases. *Online Information Review*, **32**(2), 266–283.
- Jain, A. K. and Law, M. H. C. (2005). Data clustering: A user’s dilemma. *Lecture Notes in Computer Science*, **3776**, 1–10.
- Jain, A. K. and Richard C. Dubes (1988). *Algorithms for clustering data*. Prentice Hall. ISBN 0-13-022278-X.
- Jakubowski, J. and Sztencel, R. (2010). *Wstęp do teorii prawdopodobieństwa*. Script, Warszawa.
- James, D. A. (2010). *RSQLite: SQLite interface for R*. URL <http://CRAN.R-project.org/package=RSQLite>. R package version 0.9-4.
- Jamison, B., Orey, S., and Pruitt, W. (1965). Convergence of weighted averages of independent random variables. *Zeitschrift für Wahrscheinlichkeitstheorie und Verwandte Gebiete*, **4**(1), 40–44.

- Jammalamadaka, S. R. and SenGupta, A. (2001). *Topics in Circular Statistics*. World Scientific Press, Singapore.
- Janssens, F., Zhang, L., and Glänzel, W. (2009). Hybrid clustering for validation and improvement of subject-classification schemes. *Information Processing and Management*, **45**(6), 638–702.
- Jarník, V. (1930). O jistém problému minimálním (z dopisu panu O. Borůvkovi). *Práce Moravské Přírodovědecké Společnosti v Brně*, **6**, 57–63.
- Jaroszewicz, S. and Korzeń, M. (2012). Arithmetic operations on independent random variables: A numerical approach. *SIAM Journal on Scientific Computing*, **34**, A1241–A1265.
- Jaworski, P., Durante, F., Härdle, W., and Rychlik, T. (2010). *Copula Theory and Its Applications*. Springer-Verlag.
- Jenei, S. and De Baets, B. (2003). On the direct decomposability of t-norms on product lattices. *Fuzzy Sets and Systems*, **139**(3), 699–707.
- Jensen, P., Rouquier, J.-B., and Croissant, Y. (2009). Testing bibliometric indicators by their prediction of scientific promotions. *Scientometrics*, **78**(3), 467–479.
- Jiang, H., Yi, S., Li, J., Yang, F., and Hu, X. (2010). Ant clustering algorithm with K-harmonic means clustering. *Expert Systems with Applications*, **37**, 8679–8684.
- Jiang, X., Wentker, J., and Ferrer, M. (2012). Generalized median string computation by means of string embedding in vector spaces. *Pattern Recognition Letters*, **33**, 842–852.
- Jin, B., Liang, L., Rousseau, R., and Egghe, L. (2007). The R- and AR-indices: Complementing the *h*-index. *Chinese Science Bulletin*, **52**(6), 855–863.
- Johnson, R. (1929). *Modern Geometry: An Elementary Treatise on the Geometry of the Triangle and the Circle*. Houghton Mifflin, Boston, MA.
- Johnson, S. C. (1967). Hierarchical clustering schemes. *Psychometrika*, **32**(3), 241–254.
- Johnson, S. G. (2017). The NLOpt nonlinear-optimization package. <http://ab-initio.mit.edu/nlopt>.
- Jones, O., Maillardet, R., and Robinson, A. (2009). *Introduction to Scientific Programming and Simulation Using R*. Chapman & Hall/CRC.
- Juan, A. and Vidal, E. (1998). Fast median search in metric spaces. *Lecture Notes in Computer Science*, **1451**, 905–912.
- Kacprzyk, J. and Zadrozny, S. (2007). Computing with words for text categorization. *Studies in Fuzziness and Soft Computing*, **209**, 339–362.
- Kahan, W. (1965). Further remarks on reducing truncation errors. *Communications of the ACM*, **8**(1), 40.
- Karaçal, F. and Mesiar, R. (2015). Uninorms on bounded lattices. *Fuzzy Sets and Systems*, **261**, 33–43.
- Kärkkäinen, T. and Äyrämö, S. (2005). On computation of spatial median for robust data mining. In Schilling, R. et al., editors, *Proc. EUROGEN 2005*, pages 1–14.
- Karypis, G., Han, E.-H., and Kumar, V. (1999). CHAMELEON: Hierarchical clustering using dynamic modeling. *Computer*, **32**(8), 68–75. doi:10.1109/2.781637.
- Kate, S. and Bhapkar, H. (2010). *Basic of Mathematics*. Technical Publication Pune.
- Katsaros, D., Akritidis, L., and Bozani, P. (2008). Spam: it’s not just for inboxes and search engines! Making Hirsch *h*-index robust to scientospam. arXiv:0801.0386v1 [cs.DL].
- Kelly, C. D. and Jennions, M. D. (2006). The *h* index and career assessment by numbers. *TRENDS in Ecology and Evolution*, **21**(4), 167–170.
- Kemeny, J. G. (1959). Mathematics without numbers. *Daedalus*, **88**(4), 577–591.
- Kerns, G. (2011). *Introduction to Probability and Statistics Using R*. www.ipsur.org.
- Kerre, E. E. (2011). A tribute to Zadeh’s extension principle. *Scientia Iranica*, **18**(3), 593–595.

- Kierzek, R. (2008). Polska nauka w indeksie Hirscha. *Biuletyn MNiSW*, **137**(6–7), 29–35.
- Kierzek, R. (2009). Jak porównać „apples and oranges”, czyli o różnych metodach analizy publikowalności i dorobku naukowego. *Biuletyn MNiSW*, **143**(2), 33–41.
- Kim, W. J., Ko, J. H., and Chung, M. J. (1994). Uncertain robot environment modelling using fuzzy numbers. *Fuzzy Sets and Systems*, **61**(1), 53–62.
- Kimberling, C. (1994). Central points and central lines in the plane of a triangle. *Mathematics Magazine*, **67**(3), 163–187.
- Kimberling, C. (1998). Triangle centers and central triangles. *Congressus Numerantium*, **129**, 1–295.
- Kitagawa, T. (1934). On some class of weighted means. *Proceedings of the Physico-Mathematical Society of Japan*, **16**.
- Kleene, S. C. (1955). On the forms of the predicates in the theory of constructive ordinals. *American Journal of Mathematics*, **77**(3), 405–428.
- Klement, E., Mesiar, R., and Pap, E. (2010). A universal integral as common frame for Choquet and Sugeno integral. *IEEE Transactions on Fuzzy Systems*, **18**, 178–187.
- Klement, E. P. and Mesiar, R. (2015). Monotone measures-based integrals. In Kacprzyk, J. and Pedrycz, W., editors, *Handbook of Computational Intelligence*, pages 61–74. Springer.
- Klement, E. P., Mesiar, R., and Pap, E. (2000). *Triangular norms*. Kluwer Academic Publishers.
- Klement, E. P., Mesiar, R., and Pap, E. (2004a). Triangular norms. Position paper I: Basic analytical and algebraic properties. *Fuzzy Sets and Systems*, **143**, 5–26.
- Klement, E. P., Mesiar, R., and Pap, E. (2004b). Triangular norms. Position paper II: General constructions and parametrized families. *Fuzzy Sets and Systems*, **145**, 411–438.
- Klement, E. P., Mesiar, R., and Pap, E. (2004c). Triangular norms. Position paper III: Continuous t-norms. *Fuzzy Sets and Systems*, **145**, 439–454.
- Klement, E. P., Manzi, M., and Mesiar, R. (2011). Ultramodular aggregation functions. *Information Sciences*, **181**, 4101–4111.
- Klir, G. J. and Yuan, B. (1995). *Fuzzy sets and fuzzy logic. Theory and applications*. Prentice Hall PTR, New Jersey.
- Knuth, D. (1992). *Literate Programming*. CSLI.
- Knuth, D. (2002a). *Sztuka programowania. Tom I. Algorytmy podstawowe*. WNT, Warszawa.
- Knuth, D. (2002b). *Sztuka programowania. Tom II. Algorytmy seminumeryczne*. WNT, Warszawa.
- Knuth, D. (2002c). *Sztuka programowania. Tom III. Sortowanie i wyszukiwanie*. WNT, Warszawa.
- Knuth, D. (2005). *TeX. Podręcznik użytkownika*. WNT, Warszawa.
- Knuth, D. E. (1998). *The Art of Computer Programming. Volume 2. Seminumerical Algorithms*. Addison Wesley, Reading, MA.
- Kobren, A., Monath, N., Krishnamurthy, A., and McCallum, A. (2017). A hierarchical algorithm for extreme clustering. In *Proc. 23rd ACM SIGKDD’17*, pages 255–264. doi:10.1145/3097983.3098079.
- Kobus, M. (2012). Attribute decomposition of multidimensional inequality indices. *Economics Letters*, **117**(1), 189–191.
- Kobus, M. and Miłoś, P. (2012). Inequality decomposition by population subgroups for ordinal data. *Journal of Health Economics*, **31**(1), 15–21.
- Kohonen, T. and Somervuo, P. J. (1998). Self-organizing maps of symbol strings. *Neurocomputing*, **21**, 19–30.
- Kojadinovic, I. (2004). Unsupervised aggregation by the Choquet integral based on entropy functionals: Application to the evaluation of students. *Lecture Notes in Computer Science*, **3131**, 163–174.

- Kojadinovic, I. (2008). Unsupervised aggregation of commensurate correlated attributes by means of the Choquet integral and entropy functionals. *International Journal of Intelligent Systems*, **23**(2), 128–154. doi:10.1002/int.20261.
- Kojadinovic, I. and Marichal, J.-L. (2009). On the moments and distribution of discrete Choquet integrals from continuous distributions. *Journal of Computational and Applied Mathematics*, **230**, 83–94.
- Kołodziej, A. and Grzegorzewski, P. (2016). Measures of dispersion for multidimensional data. *European Journal of Operational Research*, **251**(3), 930–937.
- Kolesárová, A., Mayor, G., and Mesiar, R. (2007). Weighted ordinal means. *Information Sciences*, **177**, 3822–3830.
- Kolesárová, A., Mesiar, R., and Montero, J. (2015). Sequential aggregation of bags. *Information Sciences*, **294**, 305–314.
- Kolmogorov, A. (1930). Sur la notion de la moyenne. *Atti della R. Accademia nazionale dei Lincei*, **12**, 388–391.
- Komorníková, M. and Mesiar, R. (2011). Aggregation functions on bounded partially ordered sets and their classification. *Fuzzy Sets and Systems*, **175**, 48–56.
- Kononen, T. (1985). Median strings. *Pattern Recognition Letters*, **3**, 309–313.
- Koppel, M., Schler, J., and Argamon, S. (2009). Computational methods in authorship attribution. *Journal of the American Society for Information Science and Technology*, **60**(1), 9–26.
- Koronacki, J. and Ćwik, J. (2005). *Statystyczne systemy uczące się*. WNT, Warszawa.
- Koronacki, J. and Mielniczuk, J. (2001). *Statystyka*. WNT, Warszawa.
- Korzeń, M. and Jaroszewicz, S. (2014). PaCAL: A Python package for arithmetic computations with random variables. *Journal of Statistical Software*, **57**(10), 1–34.
- Koshevoy, G. and Mosler, K. (1997). Zonoid trimming for multivariate distributions. *The Annals of Statistics*, **25**(5).
- Kosmulski, M. (2006). A new Hirsch-type index saves time and works equally well as the original h -index. *ISSI Newsletter*, **2**(3), 4–6.
- Kosmulski, M. (2007). MAXPROD — A new index for assessment of the scientific output of an individual, and a comparison with the h -index. *Cybermetrics*, **11**(1), 5.
- Kostal, L., Lansky, P., and Pokora, O. (2013). Measures of statistical dispersion based on Shannon and Fisher information concepts. *Information Sciences*, **235**, 214–223.
- Kostoff, R. N. (1998). The use and misuse of citation analysis in research evaluation. *Scientometrics*, **43**(1), 27–43.
- Krarup, J. and Vajda, S. (1997). On Torricelli’s geometrical solution to a problem of Fermat. *IMA Journal of Management Mathematics*, **8**, 215–223.
- Kraus, D. and Czado, C. (2017). D-vine copula based quantile regression. *Computational Statistics & Data Analysis*, **110**, 1–18.
- Krause, A. and Olson, M. (2005). *The Basics of S-PLUS*. Springer-Verlag.
- Krebs, C. (1989). *Ecological Methodology*. Harper Collins, New York.
- Kruskal, J. B. (1983). An overview of sequence comparison: Time warps, string edits, and macromolecules. *SIAM Review*, **25**(2), 201–237.
- Kuhn, T. S. (2001). *Struktura rewolucji naukowych*. Aletheia, Warszawa.
- Kuhn, T. S. (2006). *Przewrót kopernikański. Astronomia planetarna w dziejach myśli Zachodu*. Prószyński i s-ka, Warszawa.
- Kulczycki, P. and Kowalski, P. A. (2011). Bayes classification of imprecise information of interval type. *Control and Cybernetics*, **40**(1), 101–123.

- Kullback, S. and Leibler, R. (1951). On information and sufficiency. *Annals of Mathematical Statistics*, **22**(1), 79–86.
- Kuś, M., Mankiewicz, L., and Życzkowski, K. (2009). Porównywanie indeksów Hirscha uczonych i instytucji naukowych. *Biuletyn MNiSW*, **144**(3), 30–33.
- Kwakernaak, H. (1978). Fuzzy random variables: I. Definitions and theorems. *Information Sciences*, **15**(1), 1–29.
- Kärkkäinen, I. and Fränti, P. (2002). Dynamic local search algorithm for the clustering problem. In *Proc. 16th Intl. Conf. Pattern Recognition'02*, volume 2, pages 240–243. IEEE.
- Lance, G. and Williams, W. (1967). A general theory of classification sorting strategies: 1. Hierarchical systems. *Computer Journal*, pages 373–380.
- Lanctot, J. K., Li, M., Ma, B., Wang, S., and Zhang, L. (2003). Distinguishing string selection problems. *Information and Computation*, **185**, 41–55.
- Land, A. H. and Doig, A. G. (1960). An automatic method of solving discrete programming problems. *Econometrica*, **28**(3), 497–520.
- Lang, B. (2005). Monotonic multi-layer perceptron networks as universal approximators. In *Proc. ICANN'05*, volume 3697, pages 750–750.
- Lang, R. (1986). A note on the measurability of convex sets. *Arch. Math*, **47**, 90–92.
- Lange, K. (2010). *Numerical Analysis for Statisticians*. Springer-Verlag.
- Langerman, S. and Steiger, W. (2000). Computing a maximal depth point in the plane. In *Proc. Japan Conf. Discrete and Computational Geometry*, pages 46–47.
- Langerman, S. and Steiger, W. (2003). Computing a high depth point in the plane. In *Developments in Robust Statistics*, pages 228–234.
- Lasek, J. and Gagolewski, M. (2015a). Estimation of tournament metrics for association football league formats. In *Selected problems in information technologies (Proc. ITRIA'15 vol. 2)*, pages 67–78. Institute of Computer Science, Polish Academy of Sciences.
- Lasek, J. and Gagolewski, M. (2015b). The winning solution to the AAIA'15 Data Mining Competition: Tagging firefighter activities at a fire scene. In Ganzha, M., Maciaszek, L., and Paprzycki, M., editors, *Proc. FedCSIS'15*, pages 375–380. IEEE. doi:10.15439/2015F418.
- Lasek, J. and Gagolewski, M. (2018). The efficacy of league formats in ranking teams. *Statistical Modelling*, **18**(5–6), 411–435. doi:10.1177/1471082X18798426.
- Lasek, J. and Gagolewski, M. (2021). Interpretable sports team rating models based on the gradient descent algorithm. *International Journal of Forecasting*, **37**(3), 1061–1071. doi:10.1016/j.ijforecast.2020.11.008.
- Lasek, J., Szlavik, Z., Gagolewski, M., and Bhulai, S. (2016). How to improve a team's position in the FIFA ranking – A simulation study. *Journal of Applied Statistics*, **43**(7), 1349–1368. doi:10.1080/02664763.2015.1100593.
- Lavine, M. (2010). *Introduction to Statistical Thought*. www.math.umass.edu/~lavine/Book/book.html.
- Lawrence, H. and Phipps, A. (1985). Comparing partitions. *Journal of Classification*, **2**, 193–218.
- Lawrence, M. and Temple Lang, D. (2010). RGtk2: A graphical user interface toolkit for R. *Journal of Statistical Software*, **37**(8), 1–52.
- Lázaro, J. and Calvo, T. (2005). XAO operators – The interval universe. In *Proc. Eusflat/LFA'05*, pages 189–197.
- Le Gall, F. (2014). Powers of tensors and fast matrix multiplication. In *Proc. 39th Intl. Symp. Symbolic and Algebraic Computation (ISSAC'14)*, pages 296–303, New York, 2014. ACM.
- LeCun, Y., Bottou, L., Bengio, Y., and Haffner, P. (1998). Gradient-based learning applied to document recognition. *Proceedings of the IEEE*, **86**(11), 2278–2324.
- LeCun, Y., Bengio, Y., and Hinton, G. (2015). Deep learning. *Nature*, **521**, 436–444.

- Lee, E. (1982). A simplified B-spline computation routine. *Computing*, **29**(4), 365–371.
- Legendre, P. and Legendre, L. (2003). *Numerical Ecology*. Elsevier Science BV, Amsterdam.
- Lehmann, E. L. (1955). Ordered families of distributions. *Annals of Mathematical Statistics*, **26**, 399–419.
- Lehmann, E. and Casella, G. (1988). *Theory of Point Estimation*. Springer, New York.
- Lehmann, S., Jackson, A. D., and Lautrup, B. E. (2006). Measures for measures. *Nature*, **444**, 1003–1004.
- Lehmann, S., Jackson, A. D., and Lautrup, B. E. (2008). A quantitative analysis of indicators of scientific performance. *Scientometrics*, **76**(2), 369–390.
- Lehrer, E. (2009). A new integral for capacities. *Economic Theory*, **39**(1), 157–176.
- Lehtonen, E., Marichal, J.-L., and Teheux, B. (2014). Associative string functions. *Asian-European Journal of Mathematics*, **7**, 1450059.
- Leisch, F. (2006). A toolbox for K-centroids cluster analysis. *Computational Statistics & Data Analysis*, **51**(2), 526–544.
- Leisch, F. and Grün, B. (2006). Extending standard cluster algorithms to allow for group constraints. In Rizzi, A. and Vichi, M., editors, *Proc. Computational Statistics (Compstat’06)*, pages 885–892. Physica Verlag, Heidelberg, Germany.
- Lenstra Jr., H. (1983). Integer programming with a fixed number of variables. *Mathematics of Operations Research*, **8**(4), 538–548.
- Lessmann, M. and Würtz, R. P. (2012). Fast nearest neighbor search in pseudosemimetric spaces. In *Proc. VISAPP’12*, pages 667–674.
- Levenshtein, V. I. (1966). Binary codes capable of correcting deletions, insertions, or reversals. *Soviet Physics Doklady*, **10**(8), 707–710.
- Ley, C., Sabbah, C., and Verdebout, T. (2014). A new concept of quantiles for directional data and the angular Mahalanobis depth. *Electronic Journal of Statistics*, **8**(1), 795–816.
- Leydesdorff, L. (1987). Various methods for the mapping of science. *Scientometrics*, **11**(5–6), 295–324.
- Leydesdorff, L. (1998). Theories of citation? *Scientometrics*, **43**(1), 5–25.
- Leydesdorff, L. (2009). The non-linear dynamics of meaning-processing in social systems. *Social Science Information*, **48**(1), 5–33.
- Leydesdorff, L. and Opthof, T. (2010). Scopus’ source normalized impact per paper (snip) versus the journal impact factor based on fractional counting of citations. *Journal of the American Society for Information Science and Technology*, **61**(11), 2365–2396.
- Li, J. and Liu, R. Y. (2004). New nonparametric tests of multivariate locations and scales using data depth. *Statistical Science*, **19**(4), 686–696.
- Li, M., Ma, B., and Wang, L. (2002). On the closest string and substring problems. *Journal of the ACM*, **49**(2), 157–171.
- Li, W. (1992). Random texts exhibit Zipf’s-law-like word frequency distribution. *IEEE Transactions on Information Theory*, **38**(6), 1842–1845.
- Lin, S. (2010). Rank aggregation methods. *Wiley Interdisciplinary Reviews: Computational Statistics*, **2**(5), 555–570.
- Ling, R. F. (1973). A probability theory of cluster analysis. *Journal of the American Statistical Association*, **68**(341), 159–164.
- Lipschitz, R. O. S. (1864). De explicatione per series trigonometricas instituenda functionum unius variabilis arbitrariorum, et praecipue earum, quae per variabilis spatium finitum valorum maximorum et minimorum numerum habent infinitum, disquisitio. *Journal für die reine und angewandte Mathematik*, **63**(2), 296–308.
- Lipton, Z. C. (2016). The mythos of model interpretability. In *Proc. ICML Workshop on Human Interpretability of Machine Learning’16*. New York.

- Lisee, C., Lariviere, V., and Archambault, E. (2008). Conference proceedings as a source of scientific information: A bibliometric analysis. *Journal of the American Society for Information Science and Technology*, **59**(11), 1776–1784.
- Liu, R. Y. (1990). On a notion of data depth based on random simplices. *Annals of Statistics*, **18**, 405–414.
- Liu, R. Y. and Singh, K. (1992). Ordering directional data: Concepts of data depth on circles and spheres. *The Annals of Statistics*, **20**(3), 1468–1484.
- Liu, R. Y., Parelius, J. M., and Singh, K. (1999). Multivariate analysis by data depth: Descriptive statistics, graphics and inference. *The Annals of Statistics*, **27**(3), 783–858.
- Liu, Y. and Rousseau, R. (2007). Hirsch-type indices and library management: The case of Tongji University Library. In Torres-Salinas, D. and Moed, H. F., editors, *Proc. ISSI 2007*, pages 514–522, Madrid, 2007. CINDOC-CSIC.
- Liu, Y. and Rousseau, R. (2008). Definitions of time series in citation analysis with special attention to the h -index. *Journal of Informetrics*, **2**(3), 202–210.
- Lizasoain, I. (2013). Quasi-OWA operators on complete lattices. In Bustince, H., Fernandez, J., Mesiar, R., and Calvo, T., editors, *Aggregation Functions in Theory and in Practise (AISC 228)*, pages 521–532. Springer-Verlag.
- Lizasoain, I. and Moreno, C. (2013). OWA operators defined on complete lattices. *Fuzzy Sets and Systems*, **224**, 36–52.
- Lloyd, S. (1957 (1982)). Least squares quantization in PCM. *IEEE Transactions on Information Theory*, **28**, 128–137. doi:10.1109/TIT.1982.1056489. Originally a 1957 Bell Telephone Laboratories Research Report; republished in 1982.
- Lopuhaä, H. P. and Rousseeuw, P. J. (1991). Breakdown points of affine equivariant estimators of multivariate location and covariance matrices. *The Annals of Statistics*, **19**(1), 229–248.
- Lou, Y., Caruana, R., Gehrke, J., and Hooker, G. (2013). Accurate intelligible models with pairwise interactions. In *Proc. KDD’13*, pages 623–631. ACM, Chicago, IL.
- Lovisolo, L. and da Silva, E. A. B. (2001). Uniform distribution of points on a hyper-sphere with applications to vector bit-plane encoding. *IEE Proceedings on Vision, Image and Signal Processing*, **148**(3), 187–193.
- Lowrance, R. and Wagner, R. A. (1975). An extension of the string-to-string correction problem. *Journal of the ACM*, **22**(2), 177–183.
- Lucca, G., Sanz, J., Pereira Dimuro, G., Bedregal, B., Mesiar, R., Kolesárová, A., and Bustince, H. (2015). Pre-aggregation functions: construction and an application. *IEEE Transactions on Fuzzy Systems*. In press, doi:10.1109/TFUZZ.2015.2453020.
- Lucchetti, R. (2006). *Convexity and Well-Posed Problems*. CMS Books in Mathematics.
- Luceno, A. (2006). Fitting the Generalized Pareto Distribution to data using maximum goodness-of-fit estimators. *Computational Statistics and Data Analysis*, **1**(2), 904–917.
- Lughofer, E. (2011). *Evolving Fuzzy Systems: Methodologies, Advanced Concepts and Applications*. Springer.
- Lughofer, E. et al. (2017). Explaining classifier decisions linguistically for stimulating and improving operators labeling behavior. *Information Sciences*, **420**, 16–36.
- Lunga, D., Prasad, S., Crawford, M. M., and Ersoy, O. (2014). Manifold-learning-based feature extraction for classification of hyperspectral data: A review of advances in manifold learning. *IEEE Signal Processing Magazine*, **31**(1), 55–66.
- Ma, N., Guan, J., and Zhao, Y. (2008). Bringing PageRank to the citation analysis. *Information Processing & Management*, **44**, 800–810.
- MacQueen, J. (1967). Some methods for classification and analysis of multivariate observations. In *Proc. Fifth Berkeley Symposium on Mathematical Statistics and Probability*, volume 1, pages 281–297, Berkeley, 1967. University of California Press.

- MacRoberts, M. H. and MacRoberts, B. R. (2010). Problems of citation analysis: A study of uncited and seldom-cited influences. *Journal of the American Society for Information Science and Technology*, **61**(1), 1–13.
- Magdalena, L. (2015). Fuzzy rule-based systems. In Kacprzyk, J. and Pedrycz, W., editors, *Springer Handbook of Computational Intelligence*, pages 203–218. Springer, Berlin, Heidelberg.
- Magiera, R. (2007a). *Modele i metody statystyki matematycznej. Część I. Rozkłady i symulacja stochastyczna*. GiS, Wrocław.
- Magiera, R. (2007b). *Modele i metody statystyki matematycznej. Część II. Wnioskowanie statystyczne*. GiS, Wrocław.
- Mahalanobis, P. (1936). On the generalized distance in statistics. *Proceedings of the National Institute of Sciences of India*, **12**, 49–55.
- Makino, J. (1998). Productivity of research groups — Relation between citation analysis and reputation within research communities. *Scientometrics*, **43**(1), 87–93.
- Mallig, N. (2010). A relational database for bibliometric analysis. *Journal of Informetrics*, **4**(4), 564–580.
- March, W. B., Ram, P., and Gray, A. G. (2010a). Fast Euclidean minimum spanning tree: Algorithm, analysis, and applications. In *Proceedings of the 16th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, KDD’10, pages 603–612. ACM.
- March, W. B., Ram, P., and Gray, A. G. (2010b). Fast euclidean minimum spanning tree: Algorithm, analysis, and applications. In *Proc. 16th ACM SIGKDD’10*, pages 603–612. doi:10.1145/1835804.1835882.
- Marchant, T. (2009a). An axiomatic characterization of the ranking based on the h -index and some other bibliometric rankings of authors. *Scientometrics*, **80**(2), 325–342.
- Marchant, T. (2009b). Score-based bibliometric rankings of authors. *Journal of the American Society for Information Science and Technology*, **60**(6), 1132–1137.
- Mardia, K. (1975). Statistics of directional data. *Journal of the Royal Statistical Society. Series B (Methodological)*, **37**(3), 349–393.
- Mardia, K. and Jupp, E. (1999). *Directional Statistics*. Wiley.
- Marichal, J.-L. (2000a). On the associativity functional equation. *Fuzzy Sets and Systems*, **114**(3), 381–389.
- Marichal, J.-L. (2000b). An axiomatic approach of the discrete Choquet integral as a tool to aggregate interacting criteria. *IEEE Transactions on Fuzzy Systems*, **8**(6), 800–807.
- Marichal, J.-L. (2000c). On an axiomatization of the quasi-arithmetic mean values without the symmetry axiom. *Aequationes Mathematicae*, **59**(1–2), 74–83.
- Marichal, J.-L. (2000d). On Sugeno integral as an aggregation function. *Fuzzy Sets and Systems*, **114**, 347–365.
- Marichal, J.-L. (2002). On order invariant synthesizing function. *Journal of Mathematical Psychology*, **46**(6), 661–676.
- Marichal, J.-L. (2006). Cumulative distribution functions and moments of lattice polynomials. *Statistics and Probability Letters*, **76**, 1273–1279.
- Marichal, J.-L. (2007). k -intolerant capacities and Choquet integrals. *European Journal of Operational Research*, **177**(3), 1453–1468.
- Marichal, J.-L. (2008). Weighted lattice polynomials of independent random variables. *Discrete Applied Mathematics*, **156**, 685–694.
- Marichal, J.-L. (2009). Weighted lattice polynomials. *Discrete Mathematics*, **309**, 814–820.
- Marichal, J.-L. and Kojadinovic, I. (2008). Distribution functions of linear combinations of lattice polynomials from the uniform distribution. *Statistics and Probability Letters*, **78**, 985–991.
- Marichal, J.-L. and Mathonet, P. (2001). On comparison meaningfulness of aggregation functions. *Journal of Mathematical Psychology*, **45**(2), 213–223.

- Marichal, J.-L. and Mesiar, R. (2004). Aggregation on finite ordinal scales by scale independent functions. *Order*, **21**(2), 155–180.
- Marichal, J.-L. and Rubens, M. (1993). Characterization of some stable aggregation functions. In *Proc. 1st Conf. Industrial Engineering and Production Management (IEPM'93)*, pages 187–196.
- Marichal, J.-L. and Teheux, B. (2015). Preassociative aggregation functions. *Fuzzy Sets and Systems*, **268**, 15–26.
- Marichal, J.-L., Mathonet, P., and Tousset, E. (1997). Characterization of some aggregation functions stable for positive linear transformations. *Fuzzy Sets and Systems*, **102**, 293–314.
- Marichal, J.-L., Mesiar, R., and Růckschlossova, T. (2005). A complete description of comparison meaningful functions. *Æquationes Mathematicæ*, **69**, 309–320.
- Marrara, S., Pasi, G., and Viviani, M. (2017). Aggregation operators in information retrieval. *Fuzzy Sets and Systems*, **324**(Supplement C), 3–19.
- Marsaglia, G. (1972). Choosing a point from the surface of a sphere. *Annals of Mathematical Statistics*, **43**, 645–646.
- Marsaglia, G. and Marsaglia, J. (2004). Evaluating the Anderson-Darling distribution. *Journal of Statistical Software*, **9**(2).
- Martín, J., Mayor, G., and Suñer, J. (2001). On dispersion measures. *Mathware & Soft Computing*, **8**, 227–237.
- Martin, J. and Mayor, G. (2009a). Aggregating pairwise distance values. In *Proc. EUROFUSE'09*, pages 147–152.
- Martin, J. and Mayor, G. (2009b). How separated Palma, Inca and Manacor are? In *Proc. AGOP 2009*, pages 195–200.
- Martin, J. and Mayor, G. (2010). Some properties of multi-argument distances and Fermat multidistance. In Hüllermeier, E. et al., editors, *Information Processing and Management of Uncertainty in Knowledge-Based Systems*, volume 80, pages 703–711. Springer-Verlag.
- Martin, J. and Mayor, G. (2011). Multi-argument distances. *Fuzzy Sets and Systems*, **167**, 92–100.
- Martín, J. and Mayor, G. (2017). Dispersion measures and multidistances on \mathbb{R}^k . In Ferraro, M. B. et al., editors, *Soft Methods for Data Science*, pages 347–354. Springer.
- Martin, J., Mayor, G., and Valero, O. (2011a). A fixed point theorem for asymmetric distances via aggregation functions. In *Proc. 6th Intl. Summer School on Aggregation Operators (AGOP 2011)*, pages 217–222. Benevento, Italy.
- Martin, J., Mayor, G., and Valero, O. (2011b). Functionally expressible multidistances. In Galichet, S. et al., editors, *Proc. Eusflat/LFA'11*, pages 41–46.
- Martínez-Hinarejos, C., Juan, A., and Casacuberta, F. (2003). Median strings for k -nearest neighbour classification. *Pattern Recognition Letters*, pages 173–181.
- Martínez-Panero, M., García-Lapresta, J. L., and Meneses, L. C. (2016). Multidistances and dispersion measures. *Studies in Fuzziness and Soft Computing*, **339**, 123–134.
- Marzal, A. and Vidal, E. (1993). Computation of normalized edit distance and applications. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, **15**(9), 926–932.
- Masek, W. J. and Pateson, M. S. (1980). A faster algorithm computing string edit distances. *Journal of Computer and System Sciences*, **20**, 18–31.
- Massé, J.-C. (2009). Multivariate trimmed means based on the Tukey depth. *Journal of Statistical Planning and Interference*, **139**, 366–384.
- Massé, J.-C. and Plante, J. F. (2003). A Monte Carlo study of the accuracy and robustness of ten bivariate location estimators. *Computational Statistics & Data Analysis*, **42**, 1–26.
- Matloff, N. and Salzman, P. (2008). *The Art of Debugging with GDB, DDD, and Eclipse*. No Starch Press.
- Matloff, N. (2011). *The Art of R Programming: A Tour of Statistical Software Design*. No Starch Press.

- Matsumoto, M. and Nishimura, T. (1998). Mersenne twister: A 623-dimensionally equidistributed uniform pseudo-random number generator. *ACM Transactions on Modeling and Computer Simulation*, **8**(1), 3–30.
- May, K. O. (1952). A set of independent necessary and sufficient conditions for simple majority decision. *Econometrica*, **20**(4), 680–684.
- May, K. O. (1953). A note of the complete independence of the conditions for simple majority decision. *Econometrica*, **21**(1), 172–173.
- Mayor, G. and Calvo, T. (1997). On extended aggregation functions. In *Proc. IFSA 1997*, volume 1, pages 281–285. Academia, Prague.
- Mays, E., Damerau, F. J., and Mercer, R. L. (1991). Context based spelling correction. *Information Processing & Management*, **27**(2), 517–522.
- Mazumdar, A., Polyanskiy, Y., and Saha, B. (2013). On Chebyshev radius of a set in Hamming space and the closest string problem. In *Proc. IEEE Intl. Symp. Information Theory*, pages 1401–1405. IEEE.
- McKinney, W. (2017). *Python for data analysis*. O’Reilly.
- Meho, L. I. and Rogers, Y. (2008). Citation counting, citation ranking, and *h*-index of human-computer interaction researchers: A comparison between *Scopus* and *Web of Science*. *Journal of the American Society for Information Science and Technology*, **59**(11), 1711–1726.
- Meho, L. I. and Sugimoto, C. R. (2009). Assessing the scholarly impact of information studies: A tale of two citation databases — *Scopus* and *Web of Science*. *Journal of the American Society for Information Science and Technology*, **60**(12), 2499–2508.
- Mendel, F., Nad, T., and Schl  ffer, M. (2013). Improving local collisions: New attacks on reduced SHA-256. *Lecture Notes in Computer Science*, **7881**, 262–278.
- Meneses, C. N., Lu, Z., Oliveira, C. A. S., and Pardalos, P. M. (2004). Optimal solutions for the closest-string problem via integer programming. *INFORMS Journal on Computing*, **16**(4), 419–429.
- Merig  , J. M., Casanovas, M., and Yang, J.-B. (2014). Group decision making with expertons and uncertain generalized probabilistic weighted aggregation operators. *European Journal of Operational Research*, **235**, 215–224.
- Mesiar, R. (2007). Fuzzy set approach to the utility, preference relations, and aggregation operators. *European Journal of Operational Research*, **176**, 414–422.
- Mesiar, R. (2014). Integration based on decomposition. Seminar tutorial slides, Warsaw, Poland, December 11, 2014.
- Mesiar, R. and Gagolewski, M. (2016). H-index and other Sugeno integrals: Some defects and their compensation. *IEEE Transactions on Fuzzy Systems*, **24**(6), 1668–1672. doi:10.1109/TFUZZ.2016.2516579.
- Mesiar, R. and Mesiarov  -Zem  nkov  , A. (2011). The ordered modular averages. *IEEE Transactions on Fuzzy Systems*, **19**(1), 42–50.
- Mesiar, R. and Pap, E. (2008). Aggregation of infinite sequences. *Information Sciences*, **178**, 3557–3564.
- Mesiar, R. and R  ckschlossova, T. (2004). Characterization of invariant aggregation operators. *Fuzzy Sets and Systems*, **142**, 63–73.
- Mesiar, R. and Stup  anov  , A. (2013). Decomposition integrals. *International Journal of Approximate Reasoning*, **54**(8), 1252–1259.
- Mesiar, R., Koles  rov  , A., and Komorn  kov  , M. (2015). Aggregation functions on $[0, 1]$. In Kacprzyk, J. and Pedrycz, W., editors, *Handbook of Computational Intelligence*, pages 61–74. Springer.
- Meyer, D. and Hornik, K. (2013). *relations: Data Structures and Algorithms for Relations*. URL <http://CRAN.R-project.org/package=relations>. R package version 0.6-2.
- Miao, J. and Niu, L. (2016). A survey on feature selection. *Procedia Computer Science*, **91**, 919–926.
- Mic  , L. and Oncina, J. (2001). An approximate median search algorithm in non-metric spaces. *Pattern Recognition Letters*, **22**, 1145–1151.

- Milasevic, P. and Ducharme, G. (1987). Uniqueness of the spatial median. *The Annals of Statistics*, **15**(3), 1332–1333.
- Milligan, G. W. (1979). Ultrametric hierarchical clustering algorithms. *Psychometrika*, **44**(3), 343–346.
- Mingers, J. and Lipkins, E. A. (2010). Counting the citations: A comparison of *Web of Science* and Google *Scholar* in the field of business and management. *Scientometrics*, **85**, 613–625.
- Miroiu, A. (2013). Axiomatizing the hirsch index: Quantity and quality disjoined. *Journal of Informetrics*, **7**, 10–15.
- Mittal, H. (2011). *R Graphs Cookbook*. Packt Publishing.
- Miyamoto, S. (1998). Application of rough sets to information retrieval. *Journal of the American Society for Information Science*, **49**(3), 195–205.
- Moed, H. F. (2010). Measuring contextual citation impact of scientific journals. *Journal of Informetrics*, **4**(3), 265–277.
- Molinari, J. (1989). A calibrated index for the measurement of evenness. *Oikos*, **56**, 319–326.
- Monahan, J. (2001). *Numerical Methods of Statistics*. Oxford University Press.
- Moore, R. (1962). Interval arithmetic and automatic error analysis in digital computing. Technical Report 25 NR-0440211, Department of Mathematics, Stanford University, Stanford, California.
- Morgan, H. L. (1970). Spelling correction in systems programs. *Journal of the ACM*, **13**(2), 90–94.
- Mosteller, C. F. and Tukey, J. W. (1977). *Data analysis and regression*. Addison-Wesley, Reading, Mass.
- Möttönen, J., Nordhausen, K., and Oja, H. (2010). Asymptotic theory of the spatial median. *Nonparametrics and Robustness in Modern Statistical Inference and Time Series*, **7**, 182–193.
- Moyano, L. G. (2017). Learning network representations. *The European Physical Journal*, **226**(3), 499–518.
- M.R. Garey, D.S. Johnson, H. W. (1982). The complexity of the generalized Lloyd-Max problem. *IEEE Transactions on Information Theory*, **IT-28**(2), 255–256.
- Muenchen, R. (2011). *R for SAS and SPSS Users*. Springer-Verlag.
- Muenchen, R. and Hilbe, J. (2010). *R for Stata Users*. Springer-Verlag.
- Müller, A. C., Nowozin, S., and Lampert, C. H. (2012). Information theoretic clustering using minimum spanning trees. In *Proc. German Conference on Pattern Recognition*. URL <https://github.com/amueller/information-theoretic-mst>.
- Müllner, D. (2011). Modern hierarchical, agglomerative clustering algorithms. *ArXiv:1109.2378 [stat.ML]*. URL <http://arxiv.org/abs/1109.2378>.
- Müllner, D. (2013). fastcluster: Fast hierarchical, agglomerative clustering routines for R and Python. *Journal of Statistical Software*, **53**(9), 1–18.
- Murrell, P. (2006). *R Graphics*. Chapman & Hall/CRC.
- Murrell, P. (2011). Raster images in R graphics. *The R Journal*, **3**(1), 48–54.
- Murtagh, F. (1984). Complexities of hierarchical cluster algorithms: State of the art. *Computational Statistics Quarterly*, **1**(2), 101–113.
- Murtagh, F. (1985). Multidimensional clustering algorithms. In *Compstat Lectures*, volume 4. Physica-Verlag.
- Müller, A., Nowozin, S., and Lampert, C. (2012). Information theoretic clustering using minimum spanning trees. In *Proc. German Conference on Pattern Recognition*. <https://github.com/amueller/information-theoretic-mst>.
- Nagler, T. and Czado, C. (2016). Evading the curse of dimensionality in nonparametric density estimation with simplified vine copulas. *Journal of Multivariate Analysis*, **151**, 69–89.
- Nagumo, M. (1930). Über eine Klasse der Mittelwerte. *Japanese Journal of Mathematics*, **7**, 71–79.

- Naidan, B., Boytsov, L., Malkov, Y., and Novak, D. (2019). *Non-metric space library (NMSLIB) manual, version 2.0*. URL <https://github.com/nmslib/nmslib/blob/master/manual/latex/manual.pdf>.
- Nair, G. M. and Turlach, B. A. (2012). The stochastic h -index. *Journal of Informetrics*, **6**(1), 80–87.
- Narukawa, Y. and Torra, V. (2009). Multidimensional generalized fuzzy integral. *Fuzzy Sets and Systems*, **160**, 802–815.
- Nasibov, E. and Kandemir-Cavas, C. (2011). OWA-based linkage method in hierarchical clustering: Application on phylogenetic trees. *Expert Systems with Applications*, **38**, 12684–12690.
- Nasibov, E. N. and Peker, S. (2008). On the nearest parametric approximation of a fuzzy number. *Fuzzy Sets and Systems*, **159**(11), 1365–1375.
- Navarro, G. (2001). A guided tour to approximate string matching. *ACM Computing Surveys*, **33**(1), 31–88.
- Nee, S., Harvey, P., and Cotgreave, P. (1992). Population persistence and the natural relationship between body size and abundance. In *Conservation of biodiversity for sustainable development*, pages 124–136. Scandinavian University Press, Oslo.
- Needleman, S. and Wunsch, C. D. (1970). A general method applicable to the search of similarities in the amino acid sequence of two proteins. *Journal of Molecular Biology*, **48**, 443–453.
- Nelder, J. and Mead, R. (1965). A simplex method for function minimization. *Computer Journal*, **7**, 308–313.
- Nelsen, R. (1999). *An Introduction to Copulas*. Springer-Verlag.
- Neumann, K., Rolf, M., and Steil, J. J. (2013). Reliable integration of continuous constraints into extreme learning machines. *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*, **21** (suppl. 2), 35–50.
- Nicholls, P. T. (1987). Estimation of Zipf parameters. *Journal of the American Society for Information Science*, **38**(6), 443–445.
- Nicholls, P. T. (1989). Bibliometric modeling processes and the empirical validity of Lotka’s law. *Journal of the American Society for Information Science*, **40**(6), 379–385.
- Nicolas, F. and Rivals, E. (2003). Complexities of the centre and median string problems. *Lecture Notes in Computer Science*, **2676**, 315–327.
- Nicolas, F. and Rivals, E. (2005). Hardness results for the center and median string problems under the weighted and unweighted edit distances. *Journal of Discrete Algorithms*, **3**(2–4), 390–415.
- Nicolini, C., Vakula, S., Italo Balla, M., and Gandini, E. (1995). Can the assignment of university chairs be automated? *Scientometrics*, **32**(2), 93–107.
- Nienkötter, A. and Jiang, X. (2016). Improved prototype embedding based generalized median computation by means of refined construction methods. *Lecture Notes in Computer Science*, **10029**, 107–117.
- Niinimaa, A., Oja, H., and Tableman, M. (1990). The finite-sample breakdown point of the oja bivariate median and of the corresponding half-samples version. *Statistics & Probability Letters*, **10**, 325–328.
- Niinimaa, A., Oja, H., and Nyblom, J. (1992). Algorithm AS 277: The Oja bivariate median. *Journal of the Royal Statistical Society. Series C (Applied Statistics)*, **41**(3), 611–633.
- Nocedal, J. and Wright, S. (2006). *Numerical Optimization*. Springer-Verlag, New York.
- Noda, R., Sakai, T., and Morimoto, M. (1991). Generalized Fermat’s problem. *Canadian Mathematical Bulletin*, **34**, 96–104.
- Norris, M. and Oppenheim, C. (2010). Peer review and the h -index: Two studies. *Journal of Informetrics*, **4**, 221–232.
- Nowak, P. (2008). *Bibliometria. Webometria. Podstawy. Wybrane zastosowania*. UAM, Poznań.
- Oetiker, T., Przechlewski, T., and i in., R. K. (2007). *Nie za krótkie wprowadzenie do systemu L^AT_EX 2_ε*. <ftp.gust.org.pl/pub/CTAN/info/lshort/polish/lshort2e.pdf>.
- of Science Editors, E. A. (1998). EASE statement on inappropriate use of impact factors. URL: http://www.ease.org.uk/statements/EASE_statement_on_impact_factors.shtml.

- Ohki, M. and Murofushi, T. (2012). A ranking methodology using a new dispersion criterion on a group decision making. In *Proc. SCIS-ISIS 2012*, pages 1649–1653.
- Oja, H. (1983). Descriptive statistics for multivariate distributions. *Statistics & Probability Letters*, **1**, 327–332.
- Olivares-Rodríguez, C. and Oncina, J. (2008). A stochastic approach to median string computation. *Lecture Notes in Computer Science*, **5342**, 431–440.
- Olson, C. F. (1995). Parallel algorithms for hierarchical clustering. *Parallel Computing*, **21**, 1313–1325. doi:10.1016/0167-8191(95)00017-I.
- Oommen, B. (1986). Constrained string editing. *Information Sciences*, **40**, 267–284.
- Orlov, A. I. (1981). The connection between mean quantities and admissible transformations. *Mathematical Notes*, **30**(4), 774–778.
- Ortega, J. L., López-Romero, E., and Fernández, I. (2011). Multivariate approach to classify research institutes according to their outputs: The case of the CSIC’s institutes. *Journal of Informetrics*, **5**, 323–332.
- Otieno, B. S. (2002). *An Alternative Estimate of Preferred Direction for Circular Data*. PhD thesis, Virginia Polytechnic Institute and State University.
- Otte, C. (2013). Safe and interpretable machine learning: A methodological review. In *Studies in computational intelligence*, volume 445, pages 111–122. Springer.
- Ovchinnikov, S. (1996). Means on ordered sets. *Mathematical Social Sciences*, **32**, 39–56.
- Ovchinnikov, S. (1998). Invariant functions on simple orders. *Order*, **14**, 365–371.
- Ovchinnikov, S. and Dukhovny, A. (2002). On order invariant aggregation functionals. *Journal of Mathematical Psychology*, **46**, 12–18.
- Page, L., Brin, S., Motwani, R., and Winograd, T. (1998). The PageRank citation ranking: Bringing order to the Web. Technical report, Stanford University.
- Pagola, M., Forcen, J. I., Barrenechea, E., Lopez-Molina, C., and Bustince, H. (2017). Use of OWA operators for feature aggregation in image classification. In *Proc. FUZZ-IEEE’17*, pages 1–6. IEEE.
- Palacios-Huerta, I. and Volij, O. (2004). The measurement of intellectual influence. *Econometrica*, **72**(3), 963–977.
- Panaretos, J. and Malesios, C. (2009). Assessing scientific research performance and impact with single indices. *Scientometrics*, **81**(3), 635–670.
- Papadimitriou, C. and Steiglitz, K. (1982). *Combinatorial Optimization: Algorithms and Complexity*. Prentice Hall, Englewood Cliffs, NJ.
- Park, H.-S. and Jun, C.-H. (2009). A simple and fast algorithm for K-medoids clustering. *Expert Systems with Applications*, **36**, 3336–3341.
- Parzen, E. (1962). On estimation of a probability density function and mode. *The Annals of Mathematical Statistics*, **33**(3), 1065–1076.
- Pearson, K. (1894). Contributions to the mathematical theory of evolution. *Philosophical Transactions of the Royal Society A*, **185**, 71–110.
- Pedregosa, F., Varoquaux, G., Gramfort, A., Michel, V., Thirion, B., Grisel, O., Blondel, M., Prettenhofer, P., Weiss, R., Dubourg, V., Vanderplas, J., Passos, A., Cournapeau, D., Brucher, M., Perrot, M., and Duchesnay, E. (2011). Scikit-learn: Machine learning in Python. *Journal of Machine Learning Research*, **12**, 2825–2830.
- Pedrycz, W. (1998). Shadowed sets: Representing and processing fuzzy sets. *IEEE Transactions on Systems, Man, and Cybernetics*, **28**(1), 103–109.
- Pedrycz, W., Skowron, A., and Kreinovich, V., editors (2008). *Handbook of Granular Computing*. John Wiley and Sons, Chichester.
- Peneva, V. and Popchev, I. (2007). Aggregation of fuzzy preference relations to multicriteria decision making. *Fuzzy Optimization and Decision Making*, **6**, 351–365.

- Peng, R. D. (2019). *R Programming for Data Science*. URL <https://bookdown.org/rdpeng/rprogdatascience/>.
- Pérez, A., Larranaga, P., and Inza, I. (2009). Bayesian classifiers based on kernel density estimation: Flexible classifiers. *International Journal of Approximate Reasoning*, **50**, 341–362.
- Pérez-Fernández, R., Rademaker, M., and De Baets, B. (2017). Monometrics and their role in the rationalisation of ranking rules. *Information Fusion*, **34**, 16–27.
- Peters, G. (2011). Granular box regression. *IEEE Transactions on Fuzzy Systems*, **19**, 1141–1152.
- Peters, G. and Lacic, Z. (2012). Tackling outliers in granular box regression. *Information Sciences*, **212**, 44–56.
- Peterson, W. and Brown, D. (1961). Cyclic codes for error detection. *Proceedings of the IRE*, **49**(1), 228–235.
- Pielou, E. (1969). *An Introduction to Mathematical Ecology*. Wiley-Interscience, New York.
- Pielou, E. (1975). *Ecological Diversity*. Wiley, New York.
- Pielou, E. (1977). *Mathematical Ecology*. Wiley, New York.
- Pitman, E. (1939). The estimation of the location and scale parameters of a continuous population of any given form. *Biometrika*, **30**, 391–421.
- Podlubny, I. (2005). Comparison of scientific impact expressed by the number of citations in different fields of science. *Scientometrics*, **64**(1), 95–99.
- Potharst, R. and Bioch, J. (1999). A decision tree algorithm for ordinal classification. *Lecture Notes in Computer Science*, **1642**, 187–198.
- Potharst, R., Bioch, J., and Petter, T. (1997). Monotone decision trees. Technical Report EUR-FEW-CS-97-06, Erasmus University Rotterdam.
- Powell, M. J. D. (1994). A direct search optimization method that models the objective and constraint functions by linear interpolation. In *Advances in Optimization and Numerical Analysis*, volume 275 of *Mathematics and Its Applications*, pages 51–67.
- Powell, M. J. D. (2009). The BOBYQA algorithm for bound constrained optimization without derivatives. Technical Report NA2009/06, Department of Applied Mathematics and Theoretical Physics, Cambridge England.
- Prade, H., Rico, A., and Serrurier, M. (2009). Elicitation of Sugeno integrals: A version space learning perspective. *Lecture Notes in Computer Science*, **5722**, 392–401.
- Prange, E. (1957). Cyclic error-correcting codes in two symbols. Technical Report AFCRC-TN-57-103, Air Force Cambridge Research Center, Bedford, Mass.
- Prathap, G. (2010). Is there a place for a mock h -index? *Scientometrics*, **84**, 153–165.
- Press, W., Teukolsky, S., Vetterling, W., and Flannery, B. (2007). *Numerical Recipes. The Art of Scientific Computing*. Cambridge University Press.
- Price, D. J. (1965). Networks of scientific papers. *Science*, **149**(3683), 510–515.
- Prim, R. C. (1957). Shortest connection networks and some generalizations. *Bell System Technical Journal*, **36**(6), 1389–1401. doi:10.1002/j.1538-7305.1957.tb01515.x.
- Proń, A. and Szatyłowicz, H. (2006). Habilitacja dodaje „skrzydeł”? *Forum Akademickie*, **3**.
- Prpić, K. (1998). Science ethics: A study of eminent scientists’ professional values. *Scientometrics*, **43**(2), 269–298.
- Puerta, C. and Urrutia, A. (2015). A dual decomposition of the single-parameter Gini social evaluation functions. In *Proc. IFSA/EUSFLAT’15*, pages 70–76. Atlantis Press.
- Puerto, J. and Rodríguez-Chía, A. M. (1999). Location of a moving service facility. *Mathematical Methods of Operations Research*, **49**(3), 373–393.
- Puerto, J. and Rodríguez-Chía, A. M. (2006). New models for locating a moving service facility. *Mathematical Methods of Operations Research*, **63**(1), 31–51.

- Puri, M. L. and Ralescu, D. A. (1986). Fuzzy random variables. *Journal of Mathematical Analysis and Applications*, **114**(2), 409–422.
- Pérez-Fernández, R., De Baets, B., and Gagolewski, M. (2019). A taxonomy of monotonicity properties for the aggregation of multidimensional data. *Information Fusion*, **52**, 322–334. doi:10.1016/j.inffus.2019.05.006.
- Pérez-Fernández, R., Gagolewski, M., and De Baets, B. (2021). On the aggregation of compositional data. *Information Fusion*, **73**, 103–110. doi:10.1016/j.inffus.2021.02.021.
- Quesada, A. (2009). Monotonicity and the Hirsch index. *Journal of Informetrics*, **3**(2), 158–160.
- Quesada, A. (2010). More axiomatics for the Hirsch index. *Scientometrics*, **82**, 413–418.
- Quesada, A. (2011a). Axiomatics for the hirsch index and the egghe index. *Journal of Informetrics*, **5**(3), 476–480.
- Quesada, A. (2011b). Further characterizations of the Hirsch index. *Scientometrics*, **87**, 107–114.
- Quinlan, J. R. (1986). Induction of decision trees. *Machine Learning*, **1**, 81–106.
- R Development Core Team (2020). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria. URL <http://www.R-project.org>.
- Radavanovic, M., Nanopoulos, A., and Ivanovic, M. (2010). Hubs in space: Popular nearest neighbors in high-dimensional data. *Journal of Machine Learning Research*, **11**, 2487–2531.
- Rademacher, L. (2007). Approximating the centroid is hard. In *Symposium on Computational Geometry*, pages 302–305.
- Rademaker, M. and De Baets, B. (2010). A threshold for majority in the context of aggregating partial order relations. In *Proc. 19th IEEE International Conference on Fuzzy Systems (FUZZ-IEEE’10)*, pages 1–4. IEEE, Barcelona, Spain.
- Rademaker, M. and De Baets, B. (2011). Aggregation of monotone reciprocal relations with application to group decision making. *Fuzzy Sets and Systems*, **184**(1), 29–51.
- Rademaker, M. and De Baets, B. (2014). A ranking procedure based on a natural monotonicity constraint. *Information Fusion*, **17**(1), 74–82.
- Rademaker, M., De Baets, B., and De Meyer, H. (2012). Optimal monotone relabelling of partially non-monotone ordinal data. *Optimization Methods and Software*, **27**(1), 17–31.
- Rajagopalan, S. and Schulman, L. J. (2000). Verification of identities. *SIAM Journal on Computing*, **29**(4), 1155–1163.
- Rand, W. M. (1971). Objective criteria for the evaluation of clustering methods. *Journal of the American Statistical Association*, **66**(336), 846–850. doi:10.2307/2284239.
- Rao, C. R. (1999). *Statistics and truth. Putting chance to work*. World Scientific Publishing.
- Rao, C. (1964). The use and interpretation of principal component analysis in applied research. *Sankhya A*, **26**, 329–358.
- Rardin, R. (1998). *Optimization in Operations Research*. Prentice Hall, Englewood Cliffs.
- Rasiowa, H. (2003). *Wstęp do matematyki współczesnej*. PWN, Warszawa.
- Reiser, R. H., Bedregal, B., and Baczyński, M. (2013). Aggregating fuzzy implications. *Information Sciences*, **253**, 126–146.
- Rényi, A. (1959). On the dimension and entropy of probability distributions. *Acta Mathematica Hungarica*, **10** (1–2), 193–215.
- Rezaei, M. and Fränti, P. (2016). Set matching measures for external cluster validity. *IEEE Transactions on Knowledge and Data Engineering*, **28**(8), 2173–2186. doi:10.1109/TKDE.2016.2551240.
- Ribeiro, M. T., Singh, S., and Guestrin, C. (2016). Why should I trust you?: Explaining the predictions of any classifier. In *Proc. KDD’16*, pages 1135–1144.

- Richardson, M. and Domingos, P. (2002). The intelligent surfer: Probabilistic combination of link and content information in PageRank. In *Proc. Advances in Neural Information Processing Systems*, volume 14, pages 1441–1448, Cambridge, MA, 2002. MIT Press.
- Ricotta, C. (2004). A recipe for unconventional evenness measures. *Acta Biotheoretica*, **52**, 95–104.
- Ricotta, C., de Zuliani, E., Pacini, A., and Avena, G. (2001). On the mutual relatedness of evenness measures. *Community Ecology*, **2**(1), 51–56.
- Riihimäki, J. and Vehtari, A. (2010). Gaussian processes with monotonicity information. In *Proc. AISTATS’10*, pages 645–652. Sardinia, Italy.
- Rios, L. M. and Sahinidis, N. V. (2013). Derivative-free optimization: A review of algorithms and comparison of software implementations. *Journal of Global Optimization*, **56**, 1247–1293.
- Ripley, B. (2005). Internationalization features of R 2.1.0. *R News*, **5**(1), 2–7.
- Ristad, E. S. and Yianilos, P. N. (1998). Learning string-edit distance. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, **20**(5), 522–532.
- Robert, C. and Casella, G. (2004). *Monte Carlo Statistical Methods*. Springer-Verlag.
- Rockafellar, R. T. (1970). *Convex Analysis*. Princeton University Press, New Jersey.
- Rojas, K., Gómez, D., Rodríguez, J. T., and Montero, J. (2012). Some properties of consistency in the families of aggregation operators. *Advances in Intelligent and Soft Computing*, **107**, 169–176.
- Ronkainen, T., Oja, H., and Orponen, P. (2003). Coputation of the multivariate Oja median. In *Proc. Intl. Conf. Robust Statistics*, pages 344–359.
- Rothschild, M. and Stiglitz, J. (1970). Increasing risk: I. A definition. *Journal of Economic Theory*, **2**(3), 225–243.
- Roubens, M. and Vincke, P. (1985). *Preference modeling*. Lecture Notes in Economics and Mathematical Systems 250. Springer-Verlag, Berlin.
- Rousseau, R. (1990). Relations between continuous versions of bibliometric laws. *Journal of the American Society for Information Science*, **41**(3), 197–203.
- Rousseau, R. (1998). Citation analysis as a theory of friction or polluted air? *Scientometrics*, **43**(1), 63–67.
- Rousseau, R. (2007). The influence of missing publications on the Hirsch index. *Journal of Informetrics*, **1**(1), 2–7.
- Rousseau, R. (2008a). Reflections on recent developments of the h -index and h -type indices. *COLLNET Journal of Scientometrics and Information Management*, **2**(1), 1–8.
- Rousseau, R. (2008b). Woeginger’s axiomatisation of the h -index and its relation to the g -index, the $h(2)$ -index and the r^2 -index. *Journal of Informetrics*, **2**(4), 335–340.
- Rousseeuw, P. J. (1987). Silhouettes: A graphical aid to the interpretation and validation of cluster analysis. *Journal of Computational and Applied Mathematics*, **20**, 53–65. doi:10.1016/0377-0427(87)90125-7.
- Rousseeuw, P. J. and Croux, C. (1993). Alternatives to the median absolute deviation. *Journal of the American Statistical Association*, **88**(424), 1273–1283.
- Rousseeuw, P. J. and Hubert, M. (1999). Regression depth. *Journal of the American Statistical Association*, **94**(446), 388–402.
- Rousseeuw, P. J. and Ruts, I. (1996). Algorithm AS 307: Bivariate location depth. *Applied Statistics*, **45**, 516–526.
- Rousseeuw, P. J. and Ruts, I. (1998). Constructing the bivariate Tukey median. *Statistica Sinica*, **8**, 827–839.
- Rousseeuw, P. J. and Struyf, A. (1998). Computing location depth and regression depth in higher dimensions. *Statistics and Computing*, **8**, 193–203.
- Rousseeuw, P. J. and Struyf, A. (2004). Computation of robust statistics: depth, median, and related measures. In Goodman, J. E. and O’Rourke, J., editors, *The Handbook of Discrete and Computational Geometry*, pages 1279–1292. Chapman & Hall/CRC, Boca Raton.

- Rousseeuw, P. J., Ruts, I., and Tukey, J. W. (1999a). The bagplot: A bivariate boxplot. *The American Statistician*, **53**(4), 382–387.
- Rousseeuw, P. J., Van Aelst, S., and Hubert, M. (1999b). Regression depth: Rejoinder. *Journal of the American Statistical Association*, **94**(446), 419–433.
- Rousseeuw, P. J. and Ruts, I. (1999). The depth function of a population distribution. *Metrika*, **49**, 213–244.
- Routledge, R. (1983). Evenness indices: Are any admissible? *Oikos*, **40**, 149–151.
- Rowan, T. (1990). *Functional Stability Analysis of Numerical Algorithms*. PhD thesis, Department of Computer Sciences, University of Texas, Austin.
- Rowiński, T. and Gagolewski, M. (2007). Preferencje i postawy wobec pomocy online (attitudes towards online counselling and psychotherapy). *Studia Psychologica UKSW*, **7**, 195–210. in Polish.
- Rowiński, T. and Gagolewski, M. (2011). Internet a kryzys. In Jankowska, M. and Starzomska, M., editors, *Kryzys: Pułapka czy szansa?*, pages 211–224. WN Akapit, Warsaw, Poland. ISBN 978-83-609-5885-8. in Polish.
- Rubin, D. and Little, R. (2002). *Statistical Analysis with Missing Data*. John Wiley & Sons.
- Ruts, I. and Rousseeuw, P. J. (1996). Computing depth contours of bivariate point clouds. *Computational Statistics & Data Analysis*, **23**, 153–168.
- Rytgaard, M. (1990). Estimation in the Pareto distribution. *ASTIN bulletin*, **20**(2), 201–216.
- Rådström, H. (1952). An embedding theorem for spaces of convex sets. *Proceedings of the American Mathematical Society*, **3**, 165–169.
- Sánchez, G., Lladós, J., and Tombre, K. (2002). A mean string algorithm to compute the average among a set of 2D shapes. *Pattern Recognition Letters*, **23**, 203–213.
- Saaty, T. (1994). *Fundamentals of decision making and priority theory with the analytic hierarchy process*. RWS Publications, Pittsburgh.
- Sanchez, D. and Trillas, E. (2012). Measures of fuzziness under different uses of fuzzy sets. In Greco, S. et al., editors, *Proc. IPMU 2012 (CCIS 298)*, pages 25–43. Springer-Verlag.
- Sarkar, D. (2008). *Lattice: Multivariate Data Visualization with R*. Springer-Verlag.
- Schmidberger, M., Morgan, M., Eddelbuettel, D., Yu, H., Tierney, L., and Mansmann, U. (2009). State of the art in parallel computing with R. *Journal of Statistical Software*, **31**(1), 1–27.
- Schmidt, M. and Lipson, H. (2009). Distilling free-form natural laws from experimental data. *Science*, **324**(5923), 81–85.
- Schön, J. H. et al. (2001). Field-effect modulation of the conductance of single molecules. *Science*, **2138**(294). Artykuł został wycofany z powodu fałszerstwa wyników (przykład do rozdz. 1).
- Schönherr, S. (2002). *Quadratic Programming in Geometric Optimization: Theory, Implementation, and Applications*. PhD thesis, Swiss Federal Institute of Technology, Zurich, Switzerland.
- Schreiber, M. (2001). How to modify the g -index for multi-authored manuscripts. *Journal of Informetrics*, **4**(1), 42–52.
- Schreiber, M. (2007). A case study of Hirsch index for 26 non-prominent physicists. *Annalen der Physik*, **16**(9), 640–652.
- Schreiber, M. (2008). A modification of the h -index: The h_m -index accounts for multi-authored manuscripts. *Journal of Informetrics*, **2**(3), 211–216.
- Schreiber, M. (2009a). A case study of the modified Hirsch index h_m accounting for multiple coauthors. *Journal of the American Society for Information Science and Technology*, **60**(6), 1274–1282.
- Schreiber, M. (2009b). Fractionalized counting of publications for the g -index. *Journal of the American Society for Information Science and Technology*, **60**(10), 2145–2150.
- Schubert, A. (2009). Using the h -index for assessing single publications. *Scientometrics*, **78**(3), 559–565.

- Schubert, A. and Glänzel, W. (2007). A systematic analysis of Hirsch-type indices for journals. *Journal of Informetrics*, **1**, 179–184.
- Schubert, A., Korn, A., and Telcs, A. (2009). Hirsch-type indices for characterizing networks. *Scientometrics*, **78**(2), 375–382.
- Schumaker, L. (2007). *Spline Functions: Basic Theory*. Cambridge University Press.
- Schutte, H. K. and Svec, J. G. (2007). Reaction of *Folia Phoniatrica et Logopaedica* on the current trend of Impact Factor measures. *Folia Phoniatrica et Logopaedica*, **59**, 281–285.
- Schweizer, B. and Sklar, A. (1983). *Probabilistic Metric Spaces*. Elsevier, Amsterdam.
- Serfling, R. J. (1980). *Approximation theorems of mathematical statistics*. John Wiley & Sons, New York.
- Shannon, C. (1948). A mathematical theory of communications. *Bell System Technical Journal*, **27**(3), 379–423.
- Shao, J. (2007). *Mathematical Statistics*. Springer, New York.
- Sheikhpour, R., Sarram, M. A., Gharaghani, S., and Chahooki, M. A. Z. (2017). A survey on semi-supervised feature selection methods. *Pattern Recognition*, **64**, 141–158.
- Shevtsova, I. G. (2007). Sharpening of the upper bound of the absolute constant in the Berry-Esseen inequality. *Theory of Probability and its Applications*, **51**(3).
- Shi, J. and Malik, J. (2000). Normalized cuts and image segmentation. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, **22**(8), 888–905.
- Shiganov, I. S. (1986). Refinement of the upper bound of the constant in the central limit theorem. *Journal of Mathematical Sciences*, **35**(3), 2545–2550.
- Shilkret, N. (1971). Maxitive measure and integration. *Indagationes Mathematicæ*, **33**, 109–116.
- Shively, T. S., Sager, T. W., and Walker, S. G. (2009). A Bayesian approach to non-parametric monotone function estimation. *Journal of the Royal Statistical Society, Series B*, **71**(1), 159–175.
- Shumway, R. and D.S., D. S. (2011). *Time Series Analysis and Its Applications with R Examples*. Springer-Verlag.
- Sidiropoulos, A., Katsaros, D., and Manolopoulos, Y. (2007). Generalized h -index for disclosing latent facts in citation networks. *Scientometrics*, **72**(2), 253–280.
- Silberschatz, A., Peterson, J., and Gagne, G. (2005). *Podstawy systemów operacyjnych*. WNT, Warszawa.
- Simkin, M. V. and Roychowdhury, V. P. (2003). Read before you cite! *Complex Syst.*, **14**, 269–274.
- Simovici, D. and Jaroszewicz, S. (2002). An axiomatization of partition entropy. *IEEE Transactions on Information Theory*, **48**(7), 2138–2142.
- Simpson, E. (1949). Measurement of diversity. *Nature*, **163**, 688.
- Sinova, B., Casals, M., Colubi, A., and Ángeles Gil, M. (2010). The median of a random interval. In Borgelt, C. et al., editors, *Combining Soft Computing and Statistical Methods in Data Analysis*, pages 575–583. Springer.
- Sinova, B., Ángeles Gil, M., Colubi, A., and Van Aelst, S. (2012). The median of a random fuzzy number. The 1-norm distance approach. *Fuzzy Sets and Systems*, **200**, 99–115.
- Sinova, B., Gonzales-Rodriguez, G., and Van Aelst, S. (2013). An alternative approach to the median of a random interval using an l_2 metric. In Kruse, R. et al., editors, *Synergies of Soft Computing and Statistics for Intelligent Data Analysis*, pages 273–281. Springer.
- Sinova, B., Pérez-Fernández, S., and Montenegro, M. (2015). The Wabl/Ldev/Rdev median of a random fuzzy number and statistical properties. In Grzegorzewski, P. et al., editors, *Strengthening Links between Data Analysis and Soft Computing*, pages 143–150. Springer.
- Siudem, G., Żogała Siudem, B., Cena, A., and Gagolewski, M. (2020). Three dimensions of scientific impact. *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, **117**, 13896–13900. doi:10.1073/pnas.2001064117.

- Sklar, A. (1959). Fonctions de répartition à n dimensions et leurs marges. *Publications de l'Institut de Statistique de L'Université de Paris*, **8**.
- Small, C. G. (1987). Measures of centrality for multivariate and directional distributions. *Canadian Journal of Statistics*, **15**(1), 31–39.
- Small, C. G. (1990). A survey of multidimensional medians. *International Statistical Review*, **58**(3), 263–277.
- Small, H. (1998). Citations and consilience in science. *Scientometrics*, **43**(1), 143–148.
- Small, H. (2003). Paradigms, citations, and maps of science: A personal history. *Journal of the American Society for Information Science and Technology*, **54**(5), 394–399.
- Smith, B. and Wilson, J. (1996). A consumer's guide to evenness indices. *Oikos*, **76**, 70–82.
- Sneath, P. H. A. (1957). The application of computers to taxonomy. *Journal of General Microbiology*, **17**(1), 201–226. doi:10.1099/00221287-17-1-201.
- Soetaert, K., Petzoldt, T., and Setzer, R. (2010). Solving differential equations in R. *The R Journal*, **2**(2), 5–15.
- Sokal, R. and Michener, C. (1958). A statistical method for evaluating systematic relationships. *University of Kansas Science Bulletin*, **38**, 1409–1438.
- Soler, J. M. (2007). A rational indicator of scientific creativity. *Journal of Informetrics*, **1**(2), 123–130.
- Somervuo, P. J. (2004). Online algorithm for the self-organizing map of symbol strings. *Neural Networks*, **17**, 1231–1239.
- Spector, P. (2008). *Data Manipulation with R*. Springer-Verlag.
- Springer, M. D. (1979). *The Algebra of Random Variables*. John Wiley & Sons, New York.
- Stefanini, L. and Sorini, L. (2009). Fuzzy arithmetic with parametric LR fuzzy numbers. In *Proc. IFSA/EUSFLAT 2009*, pages 600–605.
- Stefanini, L. and Sorini, L. (2012). Approximation of fuzzy numbers by F-transform. In Greco, S. et al., editors, *Advances in Computational Intelligence, Part III*, volume 299 of *Communications in Computer and Information Science*, pages 69–78. Springer.
- Stephens, M. (1974). EDF statistics for goodness of fit and some comparisons. *Journal of the American Statistical Association*, **69**, 730–737.
- Stevens, S. S. (1946). On the theory of scales of measurement. *Science*, **103**(2684), 677–680.
- Stewart, T. A. (1997). *Intellectual capital — The new wealth of organizations*. Nicholas Brealey Publishing.
- Stigler, S. M. (1969). Linear functions of order statistics. *The Annals of Mathematical Statistics*, **40**(3), 770–788.
- Stoer, J. and Bulirsch, R. (1987). *Wstęp do analizy numerycznej*. PWN, Warszawa.
- Storcheus, D., Rostamizadeh, A., and Kumar, S. (2015). A survey of modern questions and challenges in feature extraction. *Journal of Machine Learning Research*, **44**, 1–18.
- Strotmann, A. and Zhao, D. (2012). Author name disambiguation: What difference does it make in author-based citation analysis? *Journal of the American Society for Information Science and Technology*, **63**, 1820–1933.
- Struyf, A. and Rousseuw, P. J. (2000). High-dimensional computation of the deepest location. *Computational Statistics & Data Analysis*, **34**, 415–426.
- Stubblebine, T. (2001). *Wyrażenia regularne. Leksykon kieszonkowy*. Helion, Gliwice.
- Sugeno, M. (1974). *Theory of fuzzy integrals and its applications*. PhD thesis, Tokyo Institute of Technology.
- Sun, H. and Wei, Y. (2006). A note on the PageRank algorithm. *Applied Mathematics and Computation*, **179**, 799–806.
- Sylvester, J. J. (1857). A question in the geometry of situation. *Quarterly Journal of Pure and Applied Mathematics*, **1**, 79.
- Szmidt, E. and Kacprzyk, J. (2000). Distances between intuitionistic fuzzy sets. *Fuzzy Sets and Systems*, **114**(3), 505–518.

- Szmidt, E. and Kacprzyk, J. (2001). Analysis of consensus under intuitionistic fuzzy preferences. In *Proc. Intl. Conf. Fuzzy Logic and Technology*, pages 79–82. De Montfort University, Leicester, UK.
- Szydlowski, M. and Krawiec, A. (2001). Scientific cycle model with delay. *Scientometrics*, **52**(1), 83–95.
- Szydlowski, M. and Krawiec, A. (2009). Growth cycles of knowledge. *Scientometrics*, **78**(1), 99–111.
- Szymanski, B. K., de la Rosa, J. L., and Krishnamoorthy, M. (2012). An internet measure of the value of citations. *Information Sciences*, **185**, 18–31.
- Tai, K.-C. (1979). Tree-to-tree correction problem. *Journal of the ACM*, **26**(3), 422–433.
- Taillie, C. (1979). Species equitability: A comparative approach. In *Ecological Diversity in Theory and Practice*, pages 51–62. Int. Coop. Publ. House, Fairland, Maryland.
- Tanenbaum, A. (2010). *Systemy operacyjne*. Helion, Gliwice.
- Tastle, J. and Tastle, W. (2005). Extending the consensus measure: analyzing ordinal data with respect to extrema. In *Proc. ISECON 2005*, volume 22, pages 1–5. Columbus OH, USA.
- Taylor, B. J., editor (2006). *Methods and Procedures for the Verification and Validation of Artificial Neural Networks*. Springer.
- Tellier, L.-N. (1972). The Weber problem: Solution and interpretation. *Geographical Analysis*, **4**(3), 215–233.
- The CGAL Project (2015). *CGAL User and Reference Manual*. CGAL Editorial Board, 4.6 edition. URL <http://doc.cgal.org/4.6/Manual/packages.html>.
- Tibshirani, R., Hastie, T., Narasimhan, B., and Chu, G. (2002). Diagnosis of multiple cancer types by shrunken centroids of gene expression. *Proceedings of the National Academy of Sciences*, **99**(10), 6567–6572.
- Tikhonov, A. and Arsenin, V. (1977). *Solution of ill-posed problems*. Winston & Sons, Washington.
- Torra, V. (1997). The weighted OWA operator. *International Journal of Intelligent Systems*, **12**, 153–166.
- Torra, V. (1999a). On the learning of weights in some aggregation operators: The weighted mean and OWA operators. *Mathware and Soft Computing*, **6**, 249–265.
- Torra, V. (1999b). On some relationships between hierarchies of quasi-arithmetic means and neural networks. *International Journal of Intelligent Systems*, **14**, 1089–1098.
- Torra, V. (2000). Learning weights for Weighted OWA operators. In *Proc. IEEE Intl. Conf. Industrial Electr. Control and Instrumentation*, pages 2530–2535.
- Torra, V. (2002). Learning weights for the quasi-weighted means. *IEEE Transactions on Fuzzy Systems*, **10**(5), 653–666.
- Torra, V., editor (2003). *Information Fusion in Data Mining*, volume 123 of *Studies in Fuzziness and Soft Computing*. Springer-Verlag.
- Torra, V. (2004). OWA operators in data modeling and reidentification. *IEEE Transactions on Fuzzy Systems*, **12**(5), 652–660.
- Torra, V. (2005). Aggregation operators and models. *Fuzzy Sets and Systems*, **156**, 407–410.
- Torra, V. (2010). Information fusion. Methods and aggregation operators. In Maimon, O. and Rokach, L., editors, *The Data Mining and Knowledge Discovery Handbook*, pages 999–1008. Springer.
- Torra, V. (2011). The WOWA operator: A review. In Yager, R. R., Kacprzyk, J., and Beliakov, G., editors, *Recent Developments in the Ordered Weighted Averaging Operators*, pages 17–28. Springer.
- Torra, V. and Lv, Z. (2009). On the WOWA operator and its interpolation function. *International Journal of Intelligent Systems*, **24**, 1039–1056.
- Torra, V. and Narukawa, Y. (2006). The interpretation of fuzzy integrals and their application to fuzzy systems. *International Journal of Approximate Reasoning*, **41**, 43–58.
- Torra, V. and Narukawa, Y. (2007a). *Modeling Decisions: Information Fusion and Aggregation Operators*. Springer-Verlag.

- Torra, V. and Narukawa, Y. (2007b). A view of averaging aggregation operators. *IEEE Transactions on Fuzzy Systems*, **15**(6), 1063–1067.
- Torra, V. and Narukawa, Y. (2008). The h -index and the number of citations: Two fuzzy integrals. *IEEE Transactions on Fuzzy Systems*, **16**(3), 795–797.
- Trutschnig, W., González-Rodríguez, G., Colubi, A., and Ángeles Gil, M. (2009). A new family of metrics for compact, convex (fuzzy) sets based on a generalized concept of mid and spread. *Information Sciences*, **179**(23), 3964–3972.
- Tukey, J. W. (1974). Mathematics and the picturing of data. *Proc. Intl. Congress of Mathematicians*, pages 523–531.
- Tukey, J. (1972). Some graphic and semigraphic displays. In Bancroft, T., editor, *Statistical Papers in Honor of George W. Snedecor*, pages 293–316. Ames.
- Tuomisto, H. (2012). An updated consumer’s guide to evenness and related indices. *Oikos*, **121**, 1203–1218.
- Ukkonen, E. (1983). On approximate string matching. *Lecture Notes in Computer Science*, **158**, 487–495.
- Ukkonen, E. (1992). Approximate string-matching with q-grams and maximal matches. *Theoretical Computer Science*, **92**, 191–211.
- Ultsch, A. (2005). Clustering with SOM: U*C. In *Workshop on Self-Organizing Maps*, pages 75–82.
- van der Loo, M. (2014). The stringdist package for approximate string matching. *The R Journal*, **6**(1), 111–122.
- van Eck, N. J. and Waltman, L. (2008). Generalizing the h - and g -indices. *Journal of Informetrics*, **2**(4), 263–271.
- van Kreveld, M., Mitchell, J. S., Rousseeuw, P., Sharir, M., Snoeyink, J., and Speckmann, B. (2008). Efficient algorithms for maximum regression depth. *Discrete and Computational Geometry*, **39**(4), 656–677.
- van Raan, A. (2004). Sleeping beauties in science. *Scientometrics*, **59**(3), 467–472.
- van Raan, A. F. J. (1998). In matters of quantitative studies of science. The fault of theorists is offering too little and asking too much. *Scientometrics*, **43**(1), 129–139.
- van Raan, A. F. J. (2006). Comparison of the Hirsch-index with standard bibliometric indicators and with peer judgment for 147 chemistry research groups. *Scientometrics*, **67**(3), 491–502.
- Vanclay, J. K. (2007). On the robustness of the h -index. *Journal of the American Society for Information Science and Technology*, **58**(10), 1547–1550.
- Vannucci, S. (2010). Dominance dimension: A common parametric formulation for integer-valued scientific impact indices. *Scientometrics*, **84**, 43–48.
- Vardi, Y. and Zhang, C.-H. (2000). The multivariate l_1 -median and associated data depth. *Proceedings of the National Academy of Sciences*, **97**(4), 1423–1426.
- Vazquez, A. (2001). Statistics of citation networks. arXiv:cond-mat/0105031v1.
- Veenman, C., Reinders, M., and Backer, E. (2002). A maximum variance cluster algorithm. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, **24**(9), 1273–1280.
- Vellido, A., Martín-Guerrero, J. D., and Lisboa, P. J. (2012). Making machine learning models interpretable. In *Proc. European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning ESANN’12*, pages 163–172.
- Venables, W. and Ripley, B. (2000). *S Programming*. Springer-Verlag.
- Venables, W. and Ripley, B. (2002). *Modern Applied Statistics with S*. Springer-Verlag.
- Vieira, E. S. and Gomes, J. A. (2010). Citations to scientific articles: Its distribution and dependencies on the article features. *Journal of Informetrics*, **4**, 1–13.
- Vieira, E. S. and Gomes, J. A. (2009). A comparison of *Scopus* and *Web of Science* for a typical university. *Scientometrics*, **81**(2), 587–600.

- Villasenor-Alva, J. and Gonzalez-Estrada, E. (2009). A bootstrap goodness of fit test for the Generalized Pareto Distribution. *Computational Statistics and Data Analysis*, **53**(11), 3835–3841.
- Vinh, N., Epps, J., and Bailey, J. (2010). Information theoretic measures for clusterings comparison: Variants, properties, normalization and correction for chance. *Journal of Machine Learning Research*, **11**(95), 2837–2854. URL <http://jmlr.org/papers/v11/vinh10a.html>.
- Vinkler, P. (1998). Comparative investigation of frequency and strength of motives toward referencing. The reference threshold model. *Scientometrics*, **43**(1), 107–127.
- Vinogradov, A. E. (1998). Secular trend of academician aging. *Scientometrics*, **43**(1), 149–160.
- Vintsyuk, T. (1968). Speech discrimination by dynamic programming. *Cybernetics*, **4**(1), 52–57.
- von Neumann, J. and Morgenstern, O. (1947). *Theory of games and economic behavior*. Princeton University Press, Princeton.
- Wachenfeld, W. and Winner, H. (2016). Do autonomous vehicles learn? In Maurer, M., Gerdes, J. C., Lenz, B., and Winner, H., editors, *Autonomous Driving: Technical, Legal and Social Aspects*, pages 451–471. Springer, Berlin, Heidelberg.
- Wagner, R. A. and Fischer, M. J. (1974). The string-to-string correction problem. *Journal of the ACM*, **21**(1), 168–173.
- Wagner-Döbler, R. (1995). Where has the cumulative advantage gone? some observations about the frequency distribution of scientific productivity, of duration of scientific participation, and of speed of publication. *Scientometrics*, **32**(2), 123–132.
- Wallis, W., Shoubridge, P., Kraetz, M., and Ray, D. (2001). Graph distances using graph union. *Pattern Recognition Letters*, **22**(6–7), 701–704.
- Waltman, L. and van Eck, N. J. (2012). The inconsistency of the h-index. *Journal of the American Society for Information Science and Technology*, **63**(2), 406–415.
- Waltman, L., van Eck, N. J., and Wouters, P. (2013). Counting publications and citations: Is more always better? *Journal of Informetrics*, **7**, 635–641.
- Wandelt, S. et al. (2014). State-of-the-art in string similarity search and join. *SIGMOD Record*, **43**(1), 64–76.
- Wang, X., Wang, X., and Wilkes, D. M. (2009). A divide-and-conquer approach for minimum spanning tree-based clustering. *IEEE Transactions on Knowledge and Data Engineering*, **21**(7), 945–958.
- Wang, X. and Kerre, E. E. (2001a). Reasonable properties for the ordering of fuzzy quantities (I). *Fuzzy Sets and Systems*, **118**(3), 375–385.
- Wang, X. and Kerre, E. E. (2001b). Reasonable properties for the ordering of fuzzy quantities (II). *Fuzzy Sets and Systems*, **118**(3), 387–405.
- Ward Jr., J. H. (1963). Hierarchical grouping to optimize an objective function. *Journal of the American Statistical Association*, **58**(301), 236–244. doi:10.1080/01621459.1963.10500845.
- Warshall, S. (1962). A theorem on Boolean matrices. *Journal of the ACM*, **9**(1), 11–12.
- Weber, S. (1984). Measures of fuzzy sets and measures of fuzziness. *Fuzzy Sets and Systems*, **13**, 247–271.
- Weiss, S. M. and Indurkha, N. (1995). Rule-based machine learning methods for functional prediction. *Journal of Artificial Intelligence Research*, **3**, 383–403.
- Weiszfeld, E. (1937). Sur le point par lequel la somme des distances de n points donnés est minimum. *Tohoku Mathematics Journal*, **43**, 355–386.
- Welzl, E. (1991). Smallest enclosing disks (balls and ellipsoids). *Lecture Notes in Computer Science*, **555**, 359–370.
- Wickham, H. (2009). *ggplot2: Elegant Graphics for Data Analysis*. Springer-Verlag.
- Wickham, H. (2010). stringr: modern, consistent string processing. *The R Journal*, **2**(2), 38–40.
- Wickham, H. (2011). testthat: Get started with testing. *The R Journal*, **3**(1), 5–10.

- Wickham, H. and Grolemond, G. (2017). *R for Data Science*. O'Reilly.
- Widrow, B. and Winter, R. (1998). Neural nets for adaptive filtering and adaptive pattern recognition. *Computer*, **21**, 25–39.
- Wieczorkowski, R. and Zieliński, R. (1997). *Komputerowe generatory liczb losowych*. WNT, Warszawa.
- Wierzchoń, S. T. and Kłopotek, M. A. (2018). *Modern algorithms of cluster analysis*. Springer.
- Wilkin, T. and Beliakov, G. (2015). Weakly monotonic averaging functions. *International Journal of Intelligent Systems*, **30**(2), 144–169.
- Wilkin, T., Beliakov, G., and Calvo, T. (2014). Weakly monotone averaging functions. *Communications in Computer and Information Science*, **444**, 364–373.
- Wilkin, T. A. (2014). *Weakly monotonic averaging with application to image processing*. PhD thesis, Deakin University.
- Wilkinson, L. (2005). *The Grammar of Graphics*. Springer-Verlag.
- Williams, C. (1964). *Patterns in the balance of nature*. Academic Press, London.
- Williams, V. V. (2012). Multiplying matrices faster than Coppersmith-Winograd. In *Proc. 44th ACM Symp. Theory of Computing (STOC '12)*, pages 887–898.
- Wilsey, B. and Potvin, C. (2000). Biodiversity and ecosystem functioning: Importance of species evenness in an old field. *Ecology*, **81**(4), 887–892.
- Winkler, W. (1990). String comparator metrics and enhanced decision rules in the Fellegi-Sunter model of record linkage. In *Proc. Section on Survey Research Methods, American Statistical Association*, pages 354–359.
- Winkler, W. E. (2006). Overview of record linkage and current research directions. Technical Report 2006-2, U.S. Census Bureau, Washington, DC.
- Witzgall, C. (1965). On convex metrics. *Journal of Research of the National Bureau of Standards – B. Mathematics and Mathematical Physics*, **69B**(3), 175–177.
- Woeginger, G. J. (2008a). An axiomatic analysis of Egghe's g -index. *Journal of Informetrics*, **2**(4), 364–368.
- Woeginger, G. J. (2008b). An axiomatic characterization of the Hirsch-index. *Mathematical Social Sciences*, **56**(2), 224–232.
- Woeginger, G. J. (2008c). A symmetry axiom for scientific impact indices. *Journal of Informetrics*, **2**, 298–303.
- Woeginger, G. J. (2009). Generalizations of Egghe's g -index. *Journal of the American Society for Information Science and Technology*, **60**(6), 1267–1273.
- Woeginger, G. J. (2010). An algorithmic comparison of three scientific impact indices. *Acta Cybernetica*, **19**, 661–672.
- Wolsey, L. (1998). *Integer Programming*. John Wiley & Sons, New York.
- Wood, S. (2006). *Generalized additive models: An introduction with R*. CRC Press.
- Wooley, J. C. (1999). Trends in computational biology: A summary based on a RECOMB plenary lecture. *Journal of Computational Biology*, **6**, 459–474.
- Wróblewski, A. K. (2001). Bibliometryczne nieporozumienia. *Forum Akademickie*, **9**.
- Wu, Q. (2010). The w -index: A measure to assess scientific impact by focusing on widely cited papers. *Journal of the American Society for Information Science and Technology*, **61**(3), 609–614.
- Xie, Y. (2013). *Dynamic Documents with R and knitr*. Chapman & Hall/CRC.
- Xu, R. and Wunsch II, D. C. (2009). *Clustering*. Wiley-IEEE Press.
- Xu, Z. (2005). An overview of methods for determining OWA weights. *International Journal of Intelligent Systems*, **20**, 843–865.
- Yager, R. R. (1987). Quasi-associative operations in the combination of evidence. *Kybernetes*, **16**(1), 37–41.

- Yager, R. R. (1988). On ordered weighted averaging aggregation operators in multicriteria decision making. *IEEE Transactions on Systems, Man, and Cybernetics*, **18**(1), 183–190.
- Yager, R. R. (1991). Connectives and quantifiers in fuzzy sets. *Fuzzy Sets and Systems*, **40**, 39–75.
- Yager, R. R. (1992). On the specificity of a possibility distribution. *Fuzzy Sets and Systems*, **50**, 279–292.
- Yager, R. R. (1993). Toward a general theory of information aggregation. *Information Sciences*, **68**(3), 191–206.
- Yager, R. R. (1998). Fusion of ordinal information using weighted median aggregation. *International Journal of Approximate Reasoning*, **18**, 35–52.
- Yager, R. R. (200). Intelligent control of the hierarchical agglomerative clustering process. *IEEE Transactions on Systems, Man, and Cybernetics, Part B (Cybernetics)*, **30**(6), 835–845.
- Yager, R. R. (2008). Prioritized aggregation operators. *International Journal of Approximate Reasoning*, **48**(1), 263–274.
- Yager, R. R. (2009). On generalized Bonferroni mean operators for multi-criteria aggregation. *International Journal of Approximate Reasoning*, **50**, 1279–1286.
- Yager, R. R. (2010). Lexicographic ordinal OWA aggregation of multiple criteria. *Information Fusion*, **11**, 374–380.
- Yager, R. R. and Beliakov, G. (2010). OWA operators in regression problems. *IEEE Transactions on Fuzzy Systems*, **18**(1), 106–113.
- Yager, R. R. and Filev, D. P. (1994). *Essentials of fuzzy modeling and control*. Wiley.
- Yager, R. R. and Kacprzyk, J., editors (1997). *The ordered weighted averaging operators. Theory and applications*. Kluwer Academic Publishers, Norwell.
- Yager, R. R. and Rybalov, A. (1996). Uninorm aggregation operators. *Fuzzy Sets and Systems*, **80**, 111–120.
- Yager, R. R. and Rybalov, A. (1997). Understanding the median as a fusion operator. *International Journal of General Systems*, **26**(3), 239–263.
- Yager, R. R., Kacprzyk, J., and Beliakov, G., editors (2011). *Recent Developments in the Ordered Weighted Averaging Operators*. Springer.
- Yan, J. (2007). Enjoy the joy of copulas: With a package `copula`. *Journal of Statistical Software*, **21**(4), 1–21.
- Yang, F., Sun, T., and Zhang, C. (2009). An efficient hybrid data clustering method based on K-harmonic means and particle swarm optimization. *Expert Systems with Applications*, **36**, 9847–9852.
- Yang, Q. (1985). The PAN-integral on the fuzzy measure space. *Fuzzy Mathematics*, **3**, 107–114.
- Yeh, C.-T. (2008a). Trapezoidal and triangular approximations preserving the expected interval. *Fuzzy Sets and Systems*, **159**, 1345–1353.
- Yeh, C.-T. (2009a). Weighted trapezoidal and triangular approximations of fuzzy numbers. *Fuzzy Sets and Systems*, **160**(21), 3059–3079.
- Yeh, C.-T. (2007). A note on trapezoidal approximations of fuzzy numbers. *Fuzzy Sets and Systems*, **158**(7), 747–754.
- Yeh, C.-T. (2008b). On improving trapezoidal and triangular approximations of fuzzy numbers. *International Journal of Approximate Reasoning*, **48**(1), 297–313.
- Yeh, C.-T. (2009b). Approximation by interval, triangular and trapezoidal fuzzy numbers. In Carvalho, J. P. et al., editors, *Proc. IFSA/EUSFLAT’09*, pages 143–148. IFSA.
- Yeh, C.-T. (2011). Weighted semi-trapezoidal approximations of fuzzy numbers. *Fuzzy Sets and Systems*, **165**(1), 61–80.
- Yianilos, P. (1993). Data structures and algorithms for nearest neighbor search in general metric spaces. In *Proc. ACM-SIAM Symp. Discrete Algorithms*, pages 311–321. Society for Industrial and Applied Mathematics, Philadelphia, PA.

- Yildirim, P. and Birant, D. (2017). K-linkage: A new agglomerative approach for hierarchical clustering. *Advances in Electrical and Computer Engineering*, **17**(4), 77–88. doi:10.4316/AECE.2017.04010.
- Yin, M., Hu, Y., Yang, F., Li, X., and Gu, W. (2011). A novel hybrid K-harmonic means and gravitational search algorithm approach for clustering. *Expert Systems with Applications*, **38**, 9319–9324.
- Young, N. S., Ioannidis, J. P. A., and Al-Ubaydli, O. (2008). Why current publication practices may distort science. *PLoS Medicine*, **5**(10), 1418–1422.
- Yu, H., Davis, M., Wilson, C. S., and Cole, F. T. H. (2008). Object-oriented data modelling for informetric databases. *Journal of Informetrics*, **2**(3), 240–251.
- Yu, J. and Yang, M.-S. (2005). Optimality test for generalized FCM and its application to parameter selection. *IEEE Transactions on Fuzzy Systems*, **13**(1), 164–176.
- Yuan, B. and Klir, G. J. (1996). Constructing fuzzy measures: A new method and its application to cluster analysis. In *Proc. NAFIPS’96*, pages 567–571.
- Zadeh, L. (1973). Outline of a new approach to the analysis of complex systems and decision processes. *IEEE Transactions on Systems, Man, and Cybernetics*, **3**, 28–44.
- Zadeh, L. A. (1965). Fuzzy sets. *Information and Control*, **8**, 338–353.
- Zadeh, L. A. (1996). Fuzzy logic = computing with words. *IEEE Transactions on Fuzzy Systems*, **4**(2), 103–111.
- Zadrozny, S. and Kacprzyk, J. (2006). Computing with words for text processing: An approach to the text categorization. *Information Sciences*, **176**, 415–437.
- Zahn, C. (1971). Graph-theoretical methods for detecting and describing gestalt clusters. *IEEE Transactions on Computers*, **C-20**(1), 68–86.
- Zeng, W. and Li, H. (2006). Inclusion measures, similarity measures, and the fuzziness of fuzzy sets and their relations. *International Journal of Intelligent Systems*, **21**, 639–653.
- Zhang, B. (1999). K-harmonic means – A data clustering algorithm. Technical Report HPL-1999-124, HP Laboratories, Palo Alto.
- Zhang, B., Hsu, M., and Dayal, U. (2001). K-harmonic means – A spatial clustering algorithm with boosting. *Lecture Notes in Artificial Intelligence*, **2007**, 31–45.
- Zhang, D. (2005). Triangular norms on partially ordered sets. *Fuzzy Sets and Systems*, **153**, 195–209.
- Zhang, J. (2010). Improving on estimation for the Generalized Pareto Distribution. *Technometrics*, **52**(3), 335–339.
- Zhang, J. and Stephens, M. A. (2009). A new and efficient estimation method for the Generalized Pareto Distribution. *Technometrics*, **51**(3), 316–325.
- Zhang, K. and Shasha, D. (1989). Simple fast algorithms for the editing distance between trees and related problems. *SIAM Journal on Computing*, **18**(6), 1245–1262.
- Zhang, L., Glänzel, W., and Liang, L. (2009a). Tracing the role of individual journals in a cross-citation network based on different indicators. *Scientometrics*, **81**(3), 821–838.
- Zhang, L., Janssens, F., Liang, L., and Glänzel, W. (2009b). Hybrid clustering analysis for mapping large scientific domains. In Larsen, B. and Leta, J., editors, *Proc. 12th Intl. Conf. Scientometrics and Informetrics*, pages 178–188.
- Zhang, L., Liu, X., Janssens, F., Liang, L., and Glänzel, W. (2010). Subject clustering analysis based on ISI category classification. *Journal of Informetrics*, **4**, 185–193.
- Zhang, T., Ramakrishnan, R., and Livny, M. (1996). BIRCH: An efficient data clustering method for large databases. In *Proc. ACM SIGMOD International Conference on Management of Data – SIGMOD ’96*, pages 103–114.
- Zhang, X., Li, Z., Loy, C. C., and Lin, D. (2017). PolyNet: A pursuit of structural diversity in very deep networks. arXiv:1611.05725.

- Zhivotovsky, L. A. and Krutowsky, K. V. (2008). Self-citation can inflate h -index. *Scientometrics*, **77**(2), 373–375.
- Zieliński, R. (1990). *Siedem wykładów wprowadzających do statystyki matematycznej*. PWN, Warszawa.
- Zieliński, R. (2009). Przedziały ufności dla frakcji. *Matematyka Stosowana*, **10**, 51–68.
- Zuo, Y. (2003). Projection-based depth functions and associated medians. *The Annals of Statistics*, **31**(5), 1460–1490.
- Zuo, Y. and Serfling, R. (2000). General notions of statistical depth function. *The Annals of Statistics*, **28**(2), 461–482.
- Życzkowski, K. (2008). Indeksy cytowań i wiosła. *Forum Akademickie*, **9**, 22–25.
- Żogała Siudem, B., Siudem, G., Cena, A., and Gagolewski, M. (2016). Agent-based model for the bibliometric h -index – Exact solution. *European Physical Journal B*, **89**(21). doi:10.1140/epjb/e2015-60757-1.