

Senior Lecturer in Applied Artificial Intelligence (\simeq Associate Professor in the North American system)

School of Information Technology, Deakin University

Melbourne-Burwood Campus, Room T2.20

221 Burwood Hwy, Burwood, VIC 3125, Australia

1 HIGHLIGHTS

RESEARCHER IN THE SCIENCE OF DATA (with particular emphasis on modelling of complex phenomena and developing of *usable*, general purpose algorithms)

- Current interests: machine learning, data clustering, data fusion, prototype learning, computational statistics, mathematical modelling for sports analytics, informetrics, science of science, etc.
- Area Editor (Data Science) in *Fuzzy Sets and Systems*
- Author/editor of 81 publications, including 39 journal papers in outlets such as *Proceedings of the National Academy of Sciences (PNAS)*, *Information Fusion*, *Statistical Modelling*, *International Journal of Forecasting*, *Journal of Statistical Software*, *Information Sciences*, *Knowledge-Based Systems*, *IEEE Transactions on Fuzzy Systems*, and *Journal of Informetrics*.
- Current h-index = 15 (Google Scholar) / 11 (Scopus) / 11 (Web of Science)
- Eligible Principal Supervisor at PhD level (principal supervisor of 3 PhD and 11 MSc by research students from commencement through to successful completion)

FREE (LIBRE) AND OPEN SOURCE DATA ANALYSIS SOFTWARE DEVELOPER

- Author and maintainer of the fast & robust *Genie* hierarchical clustering algorithm (see the Python and R package *genieclust*)
- Author and maintainer of *stringi* – one of the most downloaded R packages (over 40,000,000 downloads) that aims at text/natural language processing

DATA SCIENCE, MACHINE LEARNING, AND STATISTICAL COMPUTING TUTOR & TRAINER

- Current: Deakin University (Melbourne, Australia)
- Past: Warsaw University of Technology (Warsaw, Poland), Data Science Retreat (Berlin, Germany)
- Author of best-selling textbooks on Programming and Data Analysis in R and Python (in Polish)

2 QUALIFICATIONS

10.2017	Systems Research Institute, Polish Academy of Sciences, Warsaw, Poland <i>DSc (Habilitation)</i> in Computer Science
12.2011	Systems Research Institute, Polish Academy of Sciences, Warsaw, Poland <i>PhD</i> in Computer Science
11.2020	Deakin University, Geelong, VIC, Australia <i>Graduate Certificate</i> of Higher Education: Learning And Teaching (E575)
06.2008	Faculty of Mathematics and Information Science, Warsaw University of Technology, Poland <i>BEng and MSc</i> (by Research) in Computer Science (cum laude) [GPA 4.964/5.000]

3 EMPLOYMENT HISTORY

- 09.2019 – School of Information Technology, Deakin University, Melbourne-Burwood, VIC, Australia
Senior Lecturer in Applied Artificial Intelligence (09.2019 –)
[Note that this position is roughly equivalent to an Associate Professor (tenured) in the US]
Eligible Principal Supervisor at PhD level
Course Leadership Team Member – BSc in Artificial Intelligence (03.2020 –)
- 10.2008 – 09.2019 Faculty of Mathematics and Information Science, Warsaw University of Technology
Associate Professor in Computational Data Science (01.2018 – 09.2019)
Deputy Course (Program) Director for BSc and MSc in Data Science (10.2016 – 09.2019)
Supervisor of the Data Science Course (Program) (01.2018 – 09.2019)
First-Year Academic Liaison for BSc in Data Science (10.2017 – 09.2019)
Assistant Professor (04.2012 – 12.2017)
Teaching and Research Assistant (09.2008 – 02.2012)
- 04.2018 – 08.2019 Systems Research Institute, Polish Academy of Sciences, Warsaw, Poland
Associate Professor (04.2018 – 08.2019)
Assistant Professor (02.2012 – 03.2018)
Research Assistant (07.2008 – 01.2012)

4 SHORT-TERM RESEARCH VISITS AND CASUAL EMPLOYMENT

- 07.2014 – 07.2019 Data Science Retreat, Berlin, Germany
Python, R and Data Science Trainer and Mentor (19 batches)
- 07.2017 – 08.2017 Deakin University, Melbourne, VIC, Australia
School of Information Technology
Visiting Academic
Supported by the SEBE Researcher in Residence Program 2017, Deakin University
- 04.2015 – 06.2015 IRAFM, University of Ostrava, Czechia
Visiting Academic
Supported by ESF EU, agreement UDA-POKL.04.01.01-00-051/10-00
- 03.2013 – 06.2013 Slovak University of Technology in Bratislava, Slovakia
Visiting Academic
Supported by ESF EU, agreement UDA-POKL.04.01.01-00-051/10-00

5 ACADEMIC ACTIVITIES

5.1 RESEARCH PROJECTS

1. Chief Investigator: Australian Research Council, 2021 ARC Discovery Project DP210100227, *Beyond black-box models: Interaction in eXplainable Artificial Intelligence*, Deakin University, Australia (other CIs: Gleb Beliakov-lead and Simon James), 2021
2. Partner Investigator: The Czech Science Foundation (GAČR), research project 18-06915S, *New approaches to aggregation operators in analysis and processing of data*, University of Olomouc, Czechia (Lead CI: Radomír Halaš), 2018 (36 months)
3. Lead Chief Investigator: National Science Centre, Poland, research project NCN Sonata 2014/13/D/HS4/01700, *Construction and analysis of methods of information resources producers' quality management*, Systems Research Institute, Polish Academy of Sciences (PIs: Maciej Bartoszek, Anna Cena), 2015 (30 months)

5.2 SCHOLARSHIPS AND AWARDS

1. Warsaw University of Technology award for excellence in research, 2020 (individual, 1st degree)
2. Golden Chalk for teaching excellence, Faculty of Mathematics and Information Science, Warsaw University of Technology, 2019 (individual, 2nd degree, i.e., silver)
3. Warsaw University of Technology award for excellence in teaching, 2017 (with M. Bartoszek and A. Cena, 3rd degree)
4. Ministry of Science and Higher Education, Poland, scholarship for young researchers, 2015 (36 months)
5. Warsaw University of Technology award for excellence in teaching, 2015 (with K. Bobecka-Wesołowska and P. Grzegorzewski, 3rd degree)
6. Foundation for Polish Science (FNP), scholarship for young researchers – START Program, 2013 (12 months)
7. Warsaw University of Technology award for excellence in research, 2012 (with P. Grzegorzewski, 1st degree)
8. Warsaw University of Technology award for excellence in research, 2010 (with P. Grzegorzewski, 1st degree)
9. Ministry of Science and Higher Education, Poland, scholarship for research achievements for students, 2007

5.3 RESEARCH STUDENTS

Principal supervisor of the following PhD students:

1. Jan Lasek (PhD – completed 2019; Warsaw University of Technology) – *New Data-Driven Rating Systems for Association Football*
2. Maciej Bartoszek (PhD cum laude – completed 2018; Warsaw University of Technology) – *A Source Code Similarity Assessment System for Functional Programming Languages Based on Machine Learning and Data Aggregation Methods* (in Polish)
3. Anna Cena (PhD – completed 2018; Systems Research Institute, Polish Academy of Sciences) – *Adaptive Hierarchical Clustering Algorithms Based on Data Aggregation Methods* (in Polish)

Supervisor of the following MSc (by Research) students (Warsaw University of Technology):

1. Dawid Stelmach (MSc – completed 2020) – *Video Anomaly Detection as a One-Class-Classification Problem* (in Polish)
2. Maciej Kurek (MSc – completed 2020) – *Survival Analysis of the Time-to-Score in Sports* (in Polish)
3. Piotr Wawrzyniak (MSc – completed 2019) – *Boxing Board Results Prediction Based on Neural Networks* (in Polish)
4. Michał Hadryś (MSc – completed 2019) – *Comparison of models for match outcome prediction* (in Polish)
5. Piotr Smuda (MSc – completed 2018) – *A Music Recommendation System* (in Polish)
6. Mateusz Jabłoński (MSc – completed 2016) – *Dynamic Report Generation based on Jupyter Kernels* (in Polish)
7. Natalia Potocka (MSc – completed 2016) – *Text Clustering Based on String Metrics* (in Polish)
8. Piotr Frukacz (MSc – completed 2015) – *Mobile Salesman Assistant on Salesforce platform and Google API* (in Polish)
9. Norbert Ryciak (MSc – completed 2015) – *A Text Topic Modelling-Based Recommender System Utilising the Latent Dirichlet Allocation Method* (in Polish)
10. Emma Sanderson (MSc – completed 2015) – *New Methods for Calculating Optimal Safety Stocks at Procter&Gamble*
11. Dawid Janocha (MSc – completed 2014) – *Continuous Integration in Software Engineering* (in Polish)

5.4 PUBLICATIONS

5.4.1 RESEARCH MONOGRAPHS AND TEXTBOOKS

1. **Gagolewski M.**, *Lightweight Machine Learning Classics with R*, 2021, doi:10.5281/zenodo.4539689 (v.o.2.1), draft version available at <https://lmlcr.gagolewski.com>.
2. **Gagolewski M.**, Bartoszek M., Cena A., *Przetwarzanie i analiza danych w języku Python (Data processing & analysis in Python)*, Wydawnictwo Naukowe PWN, 2016, 369 pp., ISBN: 978-83-01-18940-2.
3. **Gagolewski M.**, *Data fusion: Theory, methods, and applications*, Institute of Computer Science, Polish Academy of Sciences, 2015, 290 pp., ISBN: 978-83-63159-20-7.

4. **Gagolewski M.**, *Programowanie w języku R. Analiza danych, obliczenia, symulacje (R programming: Data analysis, computing & simulation)*, Wydawnictwo Naukowe PWN, 2014, 1st ed. – 2014, 509 pp., ISBN: 978-83-01-17461-3; 2nd ed., revised and extended – 2016, 550 pp., ISBN: 978-83-01-18939-6.
5. Grzegorzewski P., **Gagolewski M.**, Bobecka-Wesołowska K., *Wnioskowanie statystyczne z wykorzystaniem środowiska R (Statistical inference with R)*, Politechnika Warszawska, 2014, 183 pp., ISBN: 978-83-93-72601-1.

5.4.2 EDITED VOLUMES

6. Halaš R., **Gagolewski M.**, Mesiar R. (Eds.), *New Trends in Aggregation Theory (Advances in Intelligent Systems and Computing 981)*, Springer, 2019, 348 pp., ISBN: 978-3-030-19493-2.
7. Ferraro M.B., Giordani P., Vantaggi B., **Gagolewski M.**, Gil M.Á., Grzegorzewski P., Hryniewicz O. (Eds.), *Soft methods for data science (Advances in Intelligent Systems and Computing 456)*, Springer, 2017, 535 pp., ISBN: 978-3-319-42971-7.
8. Grzegorzewski P., **Gagolewski M.**, Hryniewicz O., Gil M.Á., (Eds.), *Strengthening links between data analysis and soft computing, (Advances in Intelligent Systems and Computing 315)*, Springer, 2015, 294 pp., ISBN: 978-3-319-10764-6.

5.4.3 JOURNAL ARTICLES

9. **Gagolewski M.**, Bartoszek M., Cena A., Are cluster validity measures (in)valid?, *Information Sciences*, 2021, in press, doi:10.1016/j.ins.2021.10.004.
10. **Gagolewski M.**, stringi: Fast and Portable Character String Processing in R, *Journal of Statistical Software*, 2021, in press.
11. **Gagolewski M.**, genieclust: Fast and robust hierarchical clustering, *SoftwareX* **15**, 2021, pp. 100722.
12. Bartoszek M., **Gagolewski M.**, T-norms or t-conorms? How to aggregate similarity degrees for plagiarism detection, *Knowledge-Based Systems* **231**, 2021, pp. 107427.
13. Pérez-Fernández R., **Gagolewski M.**, De Baets B., On the aggregation of compositional data, *Information Fusion* **73**, 2021, pp. 103–110.
14. Beliakov G., **Gagolewski M.**, James S., Hierarchical data fusion processes involving the Möbius representation of capacities, *Fuzzy Sets and Systems*, 2021, in press, doi:10.1016/j.fss.2021.02.006.
15. Lasek J., **Gagolewski M.**, Interpretable sport team rating models based on the gradient descent algorithm, *International Journal of Forecasting* **37**(3), 2021, pp. 1061–1071.
16. Siudem G., Żogała-Siudem B., Cena A., **Gagolewski M.**, Three dimensions of scientific impact, *Proceedings of the National Academy of Sciences of the United States of America (PNAS)* **117**(25), 2020, pp. 13896–13900.
17. Bartoszek M., **Gagolewski M.**, SimilaR: R Code Clone and Plagiarism Detection, *R Journal* **12**(1), 2020, pp. 367–385.
18. Cena A., **Gagolewski M.**, Genie+OWA: Robustifying Hierarchical Clustering with OWA-based Linkages, *Information Sciences* **520**, 2020, pp. 324–336.
19. **Gagolewski M.**, Pérez-Fernández R., De Baets B., An inherent difficulty in the aggregation of multidimensional data, *IEEE Transactions on Fuzzy Systems* **28**(3), 2020, pp. 602–606.
20. Geras A., Siudem G., **Gagolewski M.**, Should we introduce a dislike button for academic papers?, *Journal of the Association for Information Science and Technology* **71**(2), 2020, pp. 221–229.
21. Beliakov G., **Gagolewski M.**, James S., DC optimization for constructing discrete Sugeno integrals and learning nonadditive measures, *Optimization* **69**(12), 2020, pp. 2515–2534.
22. Beliakov G., **Gagolewski M.**, James S., Robust fitting for the Sugeno integral with respect to general fuzzy measures, *Information Sciences* **514**, 2020, pp. 449–461.
23. Coroianu L., Fullér R., **Gagolewski M.**, James S., Constrained Ordered Weighted averaging aggregation with multiple comonotone constraints, *Fuzzy Sets and Systems* **395**, 2020, pp. 21–39.
24. Beliakov G., **Gagolewski M.**, James S., Aggregation on ordinal scales with the Sugeno integral for biomedical applications, *Information Sciences* **501**, 2019, pp. 377–387.

25. Pérez-Fernández R., De Baets B., **Gagolewski M.**, A taxonomy of monotonicity properties for the aggregation of multidimensional data, *Information Fusion* **52**, 2019, pp. 322–334.
26. **Gagolewski M.**, James S., Beliakov G., Supervised learning to aggregate data with the Sugeno integral, *IEEE Transactions on Fuzzy Systems* **27**(4), 2019, pp. 810–815.
27. Coroianu L., **Gagolewski M.**, Grzegorzewski P., Piecewise linear approximation of fuzzy numbers: Algorithms, arithmetic operations and stability of characteristics, *Soft Computing* **23**(19), 2019, pp. 9491–9505.
28. Lasek J., **Gagolewski M.**, The efficacy of league formats in ranking teams, *Statistical Modelling* **18**(5–6), 2018, pp. 411–435.
29. Beliakov G., **Gagolewski M.**, James S., Pace S., Pastorello N., Thilliez E., Vasa R., Measuring traffic congestion: An approach based on learning weighted inequality, spread and aggregation indices from comparison data, *Applied Soft Computing* **67**, 2018, pp. 910–919.
30. **Gagolewski M.**, Penalty-based aggregation of multidimensional data, *Fuzzy Sets and Systems* **325**, 2017, pp. 4–20.
31. Beliakov G., **Gagolewski M.**, James S., Penalty-based and other representations of economic inequality, *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems* **24**(Suppl. 1), 2016, pp. 1–23.
32. **Gagolewski M.**, Bartoszek M., Cena A., Genie: A new, fast, and outlier-resistant hierarchical clustering algorithm, *Information Sciences* **363**, 2016, pp. 8–23.
33. Mesiar R., **Gagolewski M.**, H-index and other Sugeno integrals: Some defects and their compensation, *IEEE Transactions on Fuzzy Systems* **24**(6), 2016, pp. 1668–1672.
34. Lasek J., Szlavik Z., **Gagolewski M.**, Bhulai S., How to improve a team's position in the FIFA ranking – A simulation study, *Journal of Applied Statistics* **43**(7), 2016, pp. 1349–1368.
35. Żogała-Siudem B., Siudem G., Cena A., **Gagolewski M.**, Agent-based model for the h-index – Exact solution, *European Physical Journal B* **89**:21, 2016.
36. **Gagolewski M.**, Spread measures and their relation to aggregation functions, *European Journal of Operational Research* **241**(2), 2015, pp. 469–477.
37. Cena A., **Gagolewski M.**, Mesiar R., Problems and challenges of information resources producers' clustering, *Journal of Informetrics* **9**(2), 2015, pp. 273–284.
38. Cena A., **Gagolewski M.**, OM3: Ordered maxitive, minitive, and modular aggregation operators – axiomatic and probabilistic properties in an arity-monotonic setting, *Fuzzy Sets and Systems* **264**, 2015, pp. 138–159.
39. **Gagolewski M.**, Mesiar R., Monotone measures and universal integrals in a uniform framework for the scientific impact assessment problem, *Information Sciences* **263**, 2014, pp. 166–174.
40. **Gagolewski M.**, Scientific impact assessment cannot be fair, *Journal of Informetrics* **7**(4), 2013, pp. 792–802.
41. Coroianu L., **Gagolewski M.**, Grzegorzewski P., Nearest piecewise linear approximation of fuzzy numbers, *Fuzzy Sets and Systems* **233**, 2013, pp. 26–51.
42. **Gagolewski M.**, On the relationship between symmetric maxitive, minitive, and modular aggregation operators, *Information Sciences* **211**, 2013, pp. 170–180.
43. **Gagolewski M.**, Mesiar R., Aggregating different paper quality measures with a generalized *h*-index, *Journal of Informetrics* **6**(4), 2012, pp. 566–579.
44. **Gagolewski M.**, Grzegorzewski P., Possibilistic analysis of arity-monotonic aggregation operators and its relation to bibliometric impact assessment of individuals, *International Journal of Approximate Reasoning* **52**(9), 2011, pp. 1312–1324.
45. **Gagolewski M.**, Bibliometric impact assessment with R and the CITAN package, *Journal of Informetrics* **5**(4), 2011, pp. 678–692.
46. **Gagolewski M.**, Grzegorzewski P., A geometric approach to the construction of scientific impact indices, *Scientometrics* **81**(3), 2009, pp. 617–634.
47. Rowiński T., **Gagolewski M.**, Preferencje i postawy wobec pomocy online, *Studia Psychologica UKSW* **7**, 2007, pp. 195–210.

48. Coroianu L., **Gagolewski M.**, *Penalty-based data aggregation in real normed vector spaces*, In: Halaš R. et al. (Eds.), *New Trends in Aggregation Theory (Advances in Intelligent Systems and Computing 981)*, Springer, 2019, pp. 160–171.
49. Beliakov G., **Gagolewski M.**, James S., *Least median of squares (LMS) and least trimmed squares (LTS) fitting for the weighted arithmetic mean*, In: Medina J. et al. (Eds.), *Information Processing and Management of Uncertainty in Knowledge-Based Systems. Theory and Foundation (Communications in Computer and Information Science 854)*, Springer, 2018, pp. 367–378.
50. **Gagolewski M.**, James S., *Fitting symmetric fuzzy measures for discrete Sugeno integration*, In: Kacprzyk J. et al. (Eds.), *Advances in Fuzzy Logic and Technology (Advances in Intelligent Systems and Computing 642)*, Springer, 2018, pp. 104–116.
51. Bartoszuik M., **Gagolewski M.**, *Binary aggregation functions in software plagiarism detection*, In: Proc. FUZZ-IEEE'17, 2017, 8015582.
52. Cena A., **Gagolewski M.**, *OWA-based linkage and the Genie correction for hierarchical clustering*, In: Proc. FUZZ-IEEE'17, 2017, 8015652.
53. **Gagolewski M.**, Cena A., Bartoszuik M., *Hierarchical clustering via penalty-based aggregation and the Genie approach*, In: Torra V. et al. (Eds.), *Modeling Decisions for Artificial Intelligence (Lecture Notes in Artificial Intelligence 9880)*, Springer, 2016, pp. 191–202.
54. Bartoszuik M., Beliakov G., **Gagolewski M.**, James S., *Fitting aggregation functions to data: Part I – Linearization and regularization*, In: Carvalho J.P. et al. (Eds.), *Information Processing and Management of Uncertainty in Knowledge-Based Systems, Part II (Communications in Computer and Information Science 611)*, Springer, 2016, pp. 767–779.
55. Bartoszuik M., Beliakov G., **Gagolewski M.**, James S., *Fitting aggregation functions to data: Part II – Idempotization*, In: Carvalho J.P. et al. (Eds.), *Information Processing and Management of Uncertainty in Knowledge-Based Systems, Part II (Communications in Computer and Information Science 611)*, Springer, 2016, pp. 780–789.
56. Cena A., **Gagolewski M.**, *Fuzzy k -minpen clustering and k -nearest-minpen classification procedures incorporating generic distance-based penalty minimizers*, In: Carvalho J.P. et al. (Eds.), *Information Processing and Management of Uncertainty in Knowledge-Based Systems, Part II (Communications in Computer and Information Science 611)*, Springer, 2016, pp. 445–456.
57. Lasek J., **Gagolewski M.**, *The winning solution to the AIA'15 Data Mining Competition: Tagging firefighter activities at a fire scene*, In: Ganzha M. et al. (Eds.), *Proc. FedCSIS'15, IEEE*, 2015, pp. 375–380.
58. Bartoszuik M., **Gagolewski M.**, *Detecting similarity of R functions via a fusion of multiple heuristic methods*, In: Alonso J.M. et al. (Eds.), *Proc. IFSA-EUSFLAT 2015*, Atlantis Press, 2015, pp. 484–491.
59. **Gagolewski M.**, *Normalized WD_p WAM and WD_p OWA spread measures*, In: Alonso J.M. et al. (Eds.), *Proc. IFSA-EUSFLAT 2015*, Atlantis Press, 2015, pp. 210–216.
60. Cena A., **Gagolewski M.**, *A k -means-like algorithm for informetric data clustering*, In: Alonso J.M. et al. (Eds.), *Proc. IFSA-EUSFLAT 2015*, Atlantis Press, 2015, pp. 536–543.
61. **Gagolewski M.**, Lasek J., *Learning experts' preferences from informetric data*, In: Alonso J.M. et al. (Eds.), *Proc. IFSA-EUSFLAT 2015*, Atlantis Press, 2015, pp. 484–491.
62. **Gagolewski M.**, *Some issues in aggregation of multidimensional data*, In: Baczyński M., De Baets B., Mesiar R. (Eds.), *Proc. 8th International Summer School on Aggregation Operators (AGOP 2015)*, University of Silesia, ISBN:978-83-8012-519-3, 2015, pp. 127–132.
63. Cena A., **Gagolewski M.**, *Aggregation and soft clustering of informetric data*, In: Baczyński M., De Baets B., Mesiar R. (Eds.), *Proc. 8th International Summer School on Aggregation Operators (AGOP 2015)*, University of Silesia, ISBN:978-83-8012-519-3, 2015, pp. 79–84.
64. **Gagolewski M.**, Lasek J., *The use of fuzzy relations in the assessment of information resources producers' performance*, In: Filev D. et al. (Eds.), *Proc. 7th IEEE International Conference Intelligent Systems IS'2014, Vol. 2: Tools, Architectures, Systems, Applications (Advances in Intelligent Systems and Computing 323)*, Springer, 2015, pp. 289–300.
65. **Gagolewski M.**, *Sugeno integral-based confidence intervals for the theoretical h -index*, In: Grzegorzewski P. et al. (Eds.), *Strengthening Links Between Data Analysis and Soft Computing (Advances in Intelligent Systems and Computing 315)*, Springer, 2015, pp. 233–240.

66. Lasek J., **Gagolewski M.**, *Estimation of tournament metrics for association football league formats*, In: *Selected problems in information technologies (Proc. ITRIA'15 vol. 2)*, Institute of Computer Science, Polish Academy of Sciences, 2015, pp. 67–78.
67. Cena A., **Gagolewski M.**, *Clustering and aggregation of informetric data sets*, In: *Computational methods in data analysis (Proc. ITRIA'15 vol. 1)*, Institute of Computer Science, Polish Academy of Sciences, 2015, pp. 5–26.
68. Bartoszek M., **Gagolewski M.**, *A fuzzy R code similarity detection algorithm*, In: Laurent A. et al. (Eds.), *Information Processing and Management of Uncertainty in Knowledge-Based Systems, Part III (Communications in Computer and Information Science 444)*, Springer, 2014, pp. 21–30.
69. Coroianu L., **Gagolewski M.**, Grzegorzewski P., Adabitar Firozja M., Houliari T., *Piecewise linear approximation of fuzzy numbers preserving the support and core*, In: Laurent A. et al. (Eds.), *Information Processing and Management of Uncertainty in Knowledge-Based Systems, Part II (Communications in Computer and Information Science 443)*, Springer, 2014, pp. 244–254.
70. Cena A., **Gagolewski M.**, *OM3: Ordered maxitive, minitive, and modular aggregation operators – Part I: Axiomatic analysis under arity-dependence*, In: Bustince H. et al. (Eds.), *Aggregation Functions in Theory and in Practise (Advances in Intelligent Systems and Computing 228)*, Springer, 2013, pp. 93–103.
71. Cena A., **Gagolewski M.**, *OM3: Ordered maxitive, minitive, and modular aggregation operators – Part II: A simulation study*, In: Bustince H. et al. (Eds.), *Aggregation Functions in Theory and in Practise (Advances in Intelligent Systems and Computing 228)*, Springer, 2013, pp. 105–115.
72. **Gagolewski M.**, *Statistical hypothesis test for the difference between Hirsch indices of two Pareto-distributed random samples*, In: Kruse R. et al. (Eds.), *Synergies of Soft Computing and Statistics for Intelligent Data Analysis (Advances in Intelligent Systems and Computing 190)*, Springer, 2013, pp. 359–367.
73. **Gagolewski M.**, Dębski M., Nowakiewicz M., *Efficient algorithm for computing certain graph-based monotone integrals: The l_p -indices*, In: Mesiar R., Bacigal T. (Eds.), *Proc. Uncertainty Modelling*, 2013, STU Bratislava, ISBN:978-80-227-4067-8, 2013, pp. 17–23.
74. **Gagolewski M.**, *On the relation between effort-dominating and symmetric minitive aggregation operators*, In: Greco S. et al. (Eds.), *Advances in Computational Intelligence, Vol. III (Communications in Computer and Information Science 299)*, Springer, 2012, pp. 276–285.
75. Rowiński T., **Gagolewski M.**, *Internet a kryzys*, In: Jankowska M., Starzomska M. (Eds.), *Kryzys: Pułapka czy szansa?*, WN Akapit, 2011, pp. 211–224.
76. **Gagolewski M.**, Grzegorzewski P., *Axiomatic characterizations of (quasi-) L-statistics and S-statistics and the Producer Assessment Problem*, In: Galichet S. et al. (Eds.), *Proc. 7th conf. European Society for Fuzzy Logic and Technology EUSFLAT-LFA 2011*, Atlantis Press, 2011, pp. 53–58.
77. **Gagolewski M.**, Grzegorzewski P., *Metody i problemy naukometrii*, In: Rowiński T., Tadeusiewicz R. (Eds.), *Psychologia i informatyka. Synergia i kontradycje*, Wyd. UKSW, Warszawa, 2010, pp. 103–125.
78. **Gagolewski M.**, Grzegorzewski P., *S-Statistics and their basic properties*, In: Borgelt C. et al. (Eds.), *Combining Soft Computing and Statistical Methods in Data Analysis (Advances in Intelligent and Soft Computing 77)*, Springer, 2010, pp. 281–288.
79. **Gagolewski M.**, Grzegorzewski P., *Ariety-monotonic extended aggregation operators*, In: Hüllermeier E., Kruse R., Hoffmann F. (Eds.), *Information Processing and Management of Uncertainty in Knowledge-Based Systems (Communications in Computer and Information Science 80)*, Springer, 2010, pp. 693–702.
80. **Gagolewski M.**, Grzegorzewski P., *O pewnym uogólnieniu indeksu Hirscha*, In: Kawalec P., Lipski P. (Eds.), *Kadry i infrastruktura nowoczesnej nauki: teoria i praktyka*, Vol. II, 1st International Conference on “Scientific Management”, Lublin, Poland, 20–22.11.2009, pp. 15–29.
81. **Gagolewski M.**, Grzegorzewski P., *Possible and necessary h-indices*, In: *Proc. IFSA World Congress and EUSFLAT Conference (IFSA/EUSFLAT 2009)*, Lisbon, Portugal, ISBN:978-989-95079-6-8, 2009, pp. 1691–1695.

5.5 TALKS (CONFERENCES, SEMINARS, ETC.)

5.5.1 INVITED PLENARY LECTURES AND TUTORIALS

1. *Clustering on MSTs*, International Student Conference on Applied Mathematics and Informatics ISCAMI'18, Malenovice, Czechia, 10–13.05.2018

2. *Stochastic properties of and agent-based models for the Hirsch index and other discrete Sugeno integrals*, 14th International Conference on Fuzzy Set Theory and Applications – FSTA 2018, Liptovský Ján, Slovakia, 02.02.2018
3. *Aggregation of multidimensional data: A review*, 9th International Summer School on Aggregation Operators – AGOP 2017, Skövde, Sweden, 21.06.2017
4. *Penalty-based fusion of complex data, computational aspects, and applications*, International Symposium on Aggregation and Structures – ISAS 2016, University of Luxembourg, 06.07.2016

5.5.2 OTHER INVITED

5. *R package stringi*, Text Analysis Developers' Workshop 2018, New York University, New York, NY, US, 20–21.04.2018
6. *Algorytmy analizy skupień oparte na MST*, Studencka konferencja zastosowań matematyki DwuMIan'18, Warsaw, Poland, 24.03.2018
7. *R package stringi*, Text Analysis R Developers' Workshop 2017, London School of Economics, London, England, 21–22.04.2017
8. *Genie: A new, fast, and outlier-resistant hierarchical clustering algorithm and its R interface*, European R Users Meeting, Poznań, Poland, 14.10.2016
9. *Can the scientific assessment process be fair?*, Workshop on Research Evaluation, Free University of Bozen-Bolzano, Italy, 10.05.2013

5.5.3 SEMINARS

10. *Aggregation of multidimensional data: A review*, School of Information Technology, Deakin University, Melbourne-Burwood, VIC, Australia, 21.07.2017
11. *Genie: Nowy, szybki i odporny algorytm analizy skupień*, Seminarium IBS PAN, Warszawa, Poland, 23.05.2017
12. *Agregacja danych: Teoria, metody i zastosowania*, Wykład dla słuchaczy Studiów Doktoranckich IBS PAN, Warszawa, Poland, 05.03.2016
13. $\sim(R/ICU/i18n/rege\alpha)+\$,$ Seminarium Matematyczne Metody Informatyki, Instytut Matematyki, University of Silesia, Katowice, Poland, 20.04.2015
14. *Data aggregation from an algorithmic perspective*, IRAFM Seminar, University of Ostrava, Czechia, 04.06.2015
15. *Indeks Hirscha i okolice*, Seminarium CeON, ICM UW, Warsaw, Poland, 12.03.2014
16. *Scientific impact assessment – State of the art: Agregáčné funkcie: teória a aplikácie (Aggregation functions: theory and applications)*, Seminár z modelovania neurčitosti, Katedra matematiky a deskriptívnej geometrie, SvF STU, Bratislava, Slovakia, 17.04.2013

5.5.4 CONFERENCE TALKS

17. *Penalty-based data aggregation in real normed vector spaces*, 10th International Summer School on Aggregation Operators (AGOP), Olomouc, Czechia, 1–4.07.2019
18. *Fitting symmetric fuzzy measures for discrete Sugeno integration*, 10th International Conference of EUSFLAT, Warsaw, Poland, 11–15.09.2017
19. *Binary aggregation functions in software plagiarism detection*, IEEE International Conference on Fuzzy Systems (IEEE FUZZ'17), Naples, Italy, 9–12.07.2017
20. *Binary aggregation functions in software plagiarism detection*, 3rd International Symposium on Fuzzy Sets and Uncertainty Modeling (ISFS 2017), Rzeszów, Poland, 19–20.05.2017
21. *Hierarchical clustering via penalty-based aggregation and the Genie approach*, 13th International Conference on Modeling Decisions for Artificial Intelligence (MDAI), Sant Julià de Lòria, Andorra, 20.09.2016
22. *Fitting aggregation functions to data: Part I – Linearization and regularization*, 16th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems (IPMU), Eindhoven, The Netherlands, 23.06.2016
23. *Some issues in aggregation of multidimensional data*, 8th International Summer School on Aggregation Operators (AGOP), Katowice, Poland, 07.07.2015

24. *Normalized WD_p WAM and WD_p OWA spread measures*, International Conference of IFSA/EUSFLAT 2015, Gijon, Spain, 02.07.2015
25. *Sugeno integral-based confidence intervals for the theoretical h -index*, 7th International Conference on Soft Methods in Probability and Statistics (SMPS), Warsaw, Poland, 24.09.2014
26. *OM3: Ordered maxitive, minitive, and modular aggregation operators – Part I: Axiomatic analysis under arity-dependence*, 7th International Summer School on Aggregation Operators (AGOP), Pamplona, Spain, 16–19.07.2013
27. *Statistical hypothesis test for the difference between Hirsch indices of two Pareto-distributed random samples*, 6th International Conference on Soft Methods in Probability and Statistics (SMPS), Konstanz, Germany, 04–06.10.2012
28. *On the relation between effort-dominating and symmetric minitive aggregation operators*, 14th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems (IPMU), Catania, Italy, 09–13.07.2012
29. *Porównanie wybranych estymatorów teoretycznego indeksu Hirscha*, XXXVII Konferencja Statystyka Matematyczna, Wisła, Poland, 05–09.12.2011
30. *Axiomatic characterizations of (quasi-) L-statistics and S-statistics and the Producer Assessment Problem*, 7th International Conference of EUSFLAT/LFA, Aix-Les-Bains, France, 18–22.07.2011
31. *Podstawowe właściwości S-statystyk*, XXXVI Konferencja Statystyka Matematyczna, Wisła, Poland, 06–10.12.2010
32. *S-Statistics and their basic properties*, 5th International Conference on Soft Methods in Probability and Statistics (SMPS), Oviedo, Spain, 28.09–01.10.2010
33. *Arity-monotonic extended aggregation operators*, 13th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems (IPMU), Dortmund, Germany, 28.06–02.07.2010
34. *Uogólniony indeks Hirscha a dwupróbkowe testy dla rodziny rozkładów Pareto II rodzaju*, XXXV Konferencja Statystyka Matematyczna, Wisła, Poland, 07–11.12.2009
35. *O pewnym uogólnieniu indeksu Hirscha*, 1st International Conference on “Scientific Management”, Lublin, Poland, 20–22.11.2009
36. *Possible and necessary h -indices*, 6th International Conference of IFSA/EUSFLAT, Lisbon, Portugal, 20–24.07.2009

6 REVIEWING AND OTHER ACADEMIC ACTIVITIES

- Area Editor (Data Science) in *Fuzzy Sets and Systems* (2021–)
- Member of the Research Council, Systems Research Institute, Polish Academy of Sciences (2011–2019)
- Member of the Faculty Council, Faculty of Mathematics and Information Science, Warsaw University of Technology (2017–2019)
- Scientific program committee member/chair for:
 1. 11th International Summer School on Aggregation Operators (AGOP 2021), Bratislava, Slovakia – Programme Chair
 2. 19th World Congress of the International Fuzzy Systems Association and 12th Conference of the European Society for Fuzzy Logic and Technology (IFSA/EUSFLAT 2021), Bratislava, Slovakia
 3. 10th International Summer School on Aggregation Operators (AGOP 2019), Olomouc, Czechia
 4. 11th Conference of the European Society for Fuzzy Logic and Technology (EUSFLAT 2019), Prague, Czechia
 5. 2nd International Symposium on Aggregation and Structures (ISAS 2018), Valladolid, Spain
 6. 3rd Conference on Information Technology, Systems Research and Computational Physics (ITSRCP'18), Cracow, Poland
 7. 17th World Congress of International Fuzzy Systems Association and 9th International Conference on Soft Computing and Intelligent Systems (IFSA/SCIS 2017), Otsu, Japan
 8. 1st International Symposium on Aggregation and Structures (ISAS 2016), Luxembourg
 9. 16th World Congress of the International Fuzzy Systems Association and 9th Conference of the European Society for Fuzzy Logic and Technology (IFSA/EUSFLAT 2015), Gijon, Spain
- Special session organiser at:

1. IEEE World Congress on Computational Intelligence (WCCI 2020), Glasgow (UK) – FUZZ-IEEE-6 Special Session *Aggregation Structures: New Trends and Applications*
 2. 10th Conference of the European Society for Fuzzy Logic and Technology (EUSFLAT 2017), Warsaw, Poland – Special Session *Algorithms for Data Aggregation and Fusion*
 3. 16th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems (IPMU 2016), Eindhoven, The Netherlands – Special Session *Computational Aspects of Data Aggregation and Complex Data Fusion*
- Organising committee member/chair for:
 1. 10th International Summer School on Aggregation Operators (AGOP 2019), Olomouc, Czechia – Conference Chair
 2. 10th Conference of the European Society for Fuzzy Logic and Technology (EUSFLAT 2017), Warsaw, Poland – Stream on Data Analysis Coordinator
 3. 8th International Conference Soft Methods in Probability and Statistics (SMPS 2016), Rome, Italy
 4. 8th International Summer School on Aggregation Operators (AGOP 2015), Katowice, Poland
 5. 7th International Conference Soft Methods in Probability and Statistics – SMPS 2014, Warsaw, Poland
 6. 37th Conference *Statystyka Matematyczna – Wisła 2011*, Poland
 - Reviewer of research project proposals for:
 1. Fondo Nacional de Desarrollo Científico y Tecnológico (FONDECYT; The National Fund for Scientific and Technological Development), Chile; 2017 (1)
 - Reviewer of PhD theses:
 1. Jana Borzová, PhD; Faculty of Science, P. J. Šafárik University in Košice, Slovakia; 2018
 2. Hossein Yazdani, MSc; Faculty of Electronics, Wrocław University of Science and Technology, Poland; 2018 and 2020 (re-review)
 - Peer-reviewer for the following international journals (231 reviews written):
 1. *ACM Transactions on Mathematical Software* (4)
 2. *Advances in Statistical Analysis (German Statistical Society)* (3)
 3. *Afrika Mathematica* (1)
 4. *Computational and Applied Mathematics* (1)
 5. *Control and Cybernetics* (1)
 6. *Data Mining and Knowledge Discovery* (4)
 7. *Demonstratio Mathematica* (1)
 8. *European Journal of Operational Research* (13)
 9. *Foundations of Computing and Decision Sciences* (1)
 10. *Fundamenta Informaticae* (1)
 11. *Fuzzy Optimization and Decision Making* (2)
 12. *Fuzzy Sets and Systems* (33)
 13. *Group Decision and Negotiation* (1)
 14. *IEEE Access* (1)
 15. *IEEE Transactions on Emerging Topics in Computational Intelligence* (2)
 16. *IEEE Transactions on Fuzzy Systems* (54)
 17. *Information Fusion* (7)
 18. *Information Sciences* (33)
 19. *Intelligent Systems with Applications* (1)
 20. *International Journal of Applied Mathematics and Computer Science* (2)
 21. *International Journal of Approximate Reasoning* (4)
 22. *International Journal of Computational Intelligence Systems* (4)
 23. *International Journal of Forecasting* (1)
 24. *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems* (5)
 25. *Journal of Applied Analysis* (1)

26. *Journal of Engineering Education* (1)
27. *Journal of Informetrics* (5)
28. *Journal of Intelligent and Fuzzy Systems* (3)
29. *Journal of Open Source Software* (1)
30. *Journal of the Association for Information Science and Technology* (7)
31. *Knowledge-Based Systems* (3)
32. *Mathematical Problems in Engineering* (1)
33. *Pervasive and Mobile Computing* (1)
34. *Quantitative Science Studies* (1)
35. *R Journal* (2)
36. *RUDN Journal of Mathematics, Information Sciences and Physics* (1)
37. *Scientometrics* (19)
38. *Social Sciences and Humanities Open* (1)
39. *Soft Computing* (2)
40. *Statistical Modelling* (2)

and international conferences (55 reviews written; IFSA/EUSFLAT 2009, IPMU 2010, IPMU 2012, SMPS 2014, EUSFLAT 2015, IPMU 2016, ISAS 2016, SMPS 2016, EUSFLAT 2017, IFSA/SCIS 2017, EUSFLAT 2019, FUZZ-IEEE 2020, IPMU 2020, AGOP 2021, FUZZ-IEEE 2021, IFSA/EUSFLAT 2021)

7 TEACHING-RELATED ACTIVITIES

7.1 DEAKIN UNIVERSITY, SCHOOL OF IT

- Member of the Course Leadership Team for the Bachelor of Artificial Intelligence (2020-2021)
- Academic mentor of 10 industry capstone projects at Deakin University – providing mentoring and assessment of students (2020-2021)
- Units:
 - SIT114 – Introduction to Artificial Intelligence (New Unit Developer and Unit Chair in 2020.T1 and 2021.T1)
 - SIT752 – Introduction to IT Professional Practice (Unit Chair in 2019.T3 and 2020.T1)
 - SIT172 – Programming for Engineers (Unit Campus Coordinator, 2020.T2 and 2021.T2)

7.2 FACULTY OF MATHEMATICS AND INFORMATION SCIENCE, WUT

- Supervisor of the Data Science Course (Program) (a.k.a. Dean's Proxy for Data Science Studies) and First-Year Academic Liaison (2018 – 2019); key responsibilities:
 - managing, assessing, and synchronising all data science programs,
 - handling undergraduate and graduate students' admissions,
 - coordinating students' transfers, providing advice regarding degree requirements and exchange programs (such as within the Erasmus framework),
 - counselling students with regards to their academic goals and how to meet them
- Deputy Course (Program) Director for BSc and MSc in Data Science (2016 – 2019); key responsibilities: moulding, developing, and implementing a new degree in Data Science.
- Initiator, supervisor, and mentor of the *Data Science* Student Club (2014 – 2019)
- Units:

2018–2019	Structured Data Processing (Unit Developer&Chair)
2017–2019	Introduction to Programming and Data Processing (Unit Developer&Chair)
2016–2019	Data Processing in R and Python (Unit Developer&Chair)

2015–2019	Data Processing and Analysis in Python (Unit Developer&Chair)
2012–2019	Programming and Data Analysis in R (Unit Developer&Chair)
2010–2016	Algorithms and Introduction to Programming (Unit Developer&Chair)
2014	Advanced R Programming (Unit Developer&Chair)
2009–2012	Mathematical Statistics I (Tutor)
2008–2013	Computer Statistics (Tutor)
2010–2011	Programming in x86 Assembler (Tutor)
2008–2011	Algorithms and Data Structures II (Tutor)
2007–2011	Object-oriented Programming in C++ (Tutor)

- Principal supervisor of 16 BSc and 11 MSc (by research) students in Mathematics and Computer Science.

7.3 CENTER FOR ADVANCED STUDIES, WARSAW UNIVERSITY OF TECHNOLOGY

- Units:

2018	Python for Data Processing and Analysis (Unit Developer&Chair)
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7.4 INSTITUTE OF COMPUTER SCIENCE, POLISH ACADEMY OF SCIENCES

- Units:

2014–2015	Advanced Data Analysis Software Development in R (Unit Developer&Chair) (e-learning unit, Interdisciplinary PhD studies program – 3 batches)
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7.5 WARSAW SCHOOL OF INFORMATION TECHNOLOGY

- Units:

2009–2011	Statistical Decision Support Methods (Tutor)
2008–2010	Probability and Statistics (Tutor)

7.6 SHORT COURSES AND OTHER TEACHING ACTIVITIES

- Units:

07.2019	NumPy, Pandas, TensorFlow, Advanced Python	Data Science Retreat, Berlin (Batch 19)
04.2019	NumPy, Pandas, TensorFlow, Advanced Python	Data Science Retreat, Berlin (Batch 18)
01.2019	NumPy, Pandas, TensorFlow, Advanced Python	Data Science Retreat, Berlin (Batch 17)
09.2018	NumPy, Pandas, TensorFlow, Advanced Python	Data Science Retreat, Berlin (Batch 16)
07.2018	NumPy, Pandas, TensorFlow, Advanced Python	Data Science Retreat, Berlin (Batch 15)
05.2018	NumPy, Pandas, TensorFlow, Advanced Python	Data Science Retreat, Berlin (Batch 14)
02.2018	NumPy, Pandas, TensorFlow, Advanced Python	Data Science Retreat, Berlin (Batch 13)
09.2017	NumPy, Pandas, TensorFlow, Advanced Python	Data Science Retreat, Berlin (Batch 12)
06.2017	NumPy, Pandas, TensorFlow, Advanced Python	Data Science Retreat, Berlin (Batch 11)
05.2017	NumPy, Pandas, TensorFlow, Advanced Python	Data Science Retreat, Berlin (Batch 10)
01.2017	NumPy, Pandas, TensorFlow, Advanced Python	Data Science Retreat, Berlin (Batch 09)
09.2016	Advanced Python, Data Structures and Algorithms for Data Science	Data Science Retreat, Berlin (Batch 08)
05.2016	Deep dive into R, Speeding up R and Python, Data Structures and Algorithms for Data Science	Data Science Retreat, Berlin (Batch 07)
02.2016	Speeding up R and Python, Data Structures and Algorithms for Data Science	Data Science Retreat, Berlin (Batch 06)

10.2015	Deep dive into R, Speeding up R and Python	Data Science Retreat, Berlin (Batch 05)
06.2015	Intro to R, Advanced R, Rcpp	Data Science Retreat, Berlin (Batch 04)
06.2015	String processing, Good Development Practices in R, Rcpp	GfK, Berlin
06.2015	Intro to R for Researchers	IRAFM, Ostrava
02.2015	Intro to R, Advanced R, Rcpp	Data Science Retreat, Berlin (Batch 03)
08.2014	Intro to R, Advanced R	Data Science Retreat, Berlin (Batch 02)
07.2014	Rcpp	Data Science Retreat, Berlin (Batch 01)
02.2014	Introduction to Data Analysis with R	Business Analytics, WUT
10.2013	Introduction to R	Business Analytics, WUT

8 OPEN SOURCE SOFTWARE DEVELOPMENT AND INDUSTRY ENGAGEMENT

Author and maintainer of free (libre) and open source source software (see my GitHub profile at <https://github.com/gagolews/>):

1. *genieclust* (<https://genieclust.gagolewski.com/>) – Python and R implementation of my fast and robust *Genie* hierarchical clustering algorithm
2. *stringi* (<https://stringi.gagolewski.com/>) – text/natural language processing; one of the most often downloaded R packages (over 40,000,000 downloads)
3. *stringx* (<https://stringx.gagolewski.com/>) – drop-in replacements for base R string functions powered by *stringi*
4. *realtest* (<https://realtest.gagolewski.com/>) – a framework for unit testing for realistic minimalists, where we distinguish between expected, acceptable, current, fallback, ideal, or regressive behaviour; it can also be used for monitoring other software projects for changes
5. *genie* (<http://cran.r-project.org/package=genie>) – the reference R implementation of the *Genie* algorithm, now superseded by *genieclust*
6. *SimilaR* (<http://cran.r-project.org/package=SimilaR>) – code clones and plagiarism detection within R code chunks
7. *FuzzyNumbers* (<http://cran.r-project.org/package=FuzzyNumbers>) – R package implementing interval and fuzzy numbers arithmetic, and various piecewise linear approximation algorithms
8. *agop* (<http://cran.r-project.org/package=agop>) – aggregation operators in R
9. *CITAN* (<http://cran.r-project.org/package=CITAN>) – citation analysis toolpack for R
10. *TurtleGraphics* (<http://cran.r-project.org/package=TurtleGraphics>) – learn R programming while having a jolly time!

Other:

- Amongst top 3% StackOverflow users (<https://stackoverflow.com/users/3309529/gagolews>)
- Google *Summer of Code 2016* – Mentor of the *RE2 Regular Expressions in R* project (Student: Qin Wenfeng), 2016
- StackOverflow *Academic Research Partnership Program* – Supervisor of a research task related to quantitative determinants of the popularity of online content, 2019
- Academic mentor of 10 industry capstone projects at Deakin University, 2020-2021

Marek Gagolewski
7 October 2021