

CURRICULUM VITAE

(included in the website of the Systems Research Institute, Polish Academy of Sciences)



Piotr Kulczycki

Born: 15 April 1958 in Cracow, Poland.

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Professional interests:

Information technology and **systems research**, in particular:

- ☐ data analysis and mining,
- ☐ mathematical statistics,
- ☐ control engineering,
- ☐ mathematical modeling,
- ☐ computational intelligence,
- ☐ differential equations.

Academic degrees:

Prof. Technical Sciences; President of the Republic of Poland; following a procedure at the Polish Academy of Sciences, Systems Research Institute, 2007.

D.Sc. (habilitation) AGH University of Science and Technology, Faculty of Electrical Engineering, Automatic Control, Computer Science, and Electronics, 1999.

Ph.D. AGH University of Science and Technology, Faculty of Electrical Engineering, Automatic Control and Electronics, 1991.

M.Sc.Math. Jagiellonian University, Faculty of Mathematics and Physics, 1987.

M.Sc.EE. AGH University of Science and Technology, Faculty of Electrical Engineering, Automatic Control and Electronics, 1983.

Professional career:

- 2000-pres. **Polish Academy of Sciences**, Systems Research Institute; from associate professor to full professor; 2009-11 – Head of Center for Statistical Data Analysis Methods, since 2011 – Head of Center of Information Technology for Data Analysis Methods.
- 2014-pres. **AGH University of Science and Technology**, Faculty of Physics and Applied Computer Science; full professor; 2014-16 – Head of Division for Information Technology and Biometry, since 2016 – Head of Division for Information Technology and Systems Research.
- 1987-2014 **Cracow University of Technology**, Faculty of Electrical and Computer Engineering; from assistant to full professor; 2000-03 – Head of Department of Control Engineering, 2003-10 – Head of Department of Automatic Control, 2010-13 – Head of Department of Automatic Control and Information Technology.
- 1997-98 **AGH University of Science and Technology**, Faculty of Applied Mathematics, assistant professor.
- 1992-93 **Aalborg University** (Denmark), Department of Control Engineering, visiting professor.

Selected details:

- ❑ author of 3 books;
- ❑ author of 57 papers in scientific journals, of which 38 appear in the *JCR (Journal Citation Reports)* list, including *IEEE Transactions on Fuzzy Systems*, *IEEE Transactions on Neural Network*, *IEEE Transactions on Automatic Control*, *Fuzzy Sets and Systems*, *Applied Soft Computing*, *Applied Mathematical Modelling* and others;
- ❑ author of 48 chapters in edited volumes;
- ❑ participant and author of publications for proceedings of 112 scientific conferences, among others *IFAC World Congress*, *IEEE World Congress on Computational Intelligence*, *IMACS World Congress on Scientific Computation*, *Applied Mathematics and Simulation*;
- ❑ editor of 3 edited volumes;
- ❑ editor of 4 special issues of scientific journals and 2 conference proceedings;
- ❑ member of editorial board of 13 scientific journals, including *Editor-in-Chief* and *Advisory Editor*;
- ❑ member of program committee of 122 scientific conferences, *Chairman of IPC* on 8 of which;
- ❑ member of 7 scientific organizations, including *IFAC Technical Committee 1.1 “Modelling, Identification and Signal Processing”* and *Technical Committee 2.6 “Distributed Parameter Systems”*, and also *Senior Member IEEE*;
- ❑ member of the *Committee of Automation and Robotics* of the *Polish Academy of Sciences*;
- ❑ participant of 9 projects, 5 of which being international;
- ❑ recipient of 15 foreign state-sponsored fellowships;
- ❑ recipient of 13 medals and awards;
- ❑ supervisor of 7 Ph.D. theses, 4 of which with honors;
- ❑ supervisor of 50 graduate theses;

- cooperation with Aalborg University (Denmark), Budapest University of Technology and Economics (Hungary), Slovak University of Technology (Slovakia), Helsinki University of Technology (Finland), Université Catholique de Louvain (Belgium), Johannes Kepler University Linz (Austria).

List of publications (selected items):

1. Books and edited volumes:

- 1.6. P. Kulczycki, L.T. Koczy, R. Mesiar, J. Kacprzyk (eds.)
“Information Technology and Computational Physics”
■ **Springer**, Cham, 2017.
- 1.5. P. Kulczycki, P.A. Kowalski, S. Łukasik (eds.)
“Information Technology, Computational and Experimental Physics”
■ AGH-UCT Press, Cracow, 2016.
- 1.4. P. Kulczycki, O. Hryniewicz, J. Kacprzyk (eds.)
“Techniki informacyjne w badaniach systemowych”
■ **WNT**, Warsaw, 2007.
- 1.3. P. Kulczycki
“Estymatory jądrowe w analizie systemowej”
■ **WNT**, Warsaw, 2005.
- 1.2. P. Kulczycki
“Wykrywanie uszkodzeń w systemach zautomatyzowanych metodami statystycznymi”
■ **Alfa**, Warsaw, 1998.
- 1.1. P. Kulczycki
“Czasowo optymalne sterowanie stochastyczne nieciągłym układem dynamicznym”
■ **WPK**, Cracow, 1992.

2. Articles in scientific journals* (selected items):

- 2.38. P. Kulczycki, M. Charytanowicz, P.A. Kowalski, S. Łukasik
“Identification of Atypical (Rare) Elements – A Conditional, Distribution-Free Approach”
■ **IMA Journal of Mathematical Control and Information**, in press, 2018.
- 2.37. M. Charytanowicz, P. Kulczycki, P.A. Kowalski, S. Łukasik, R. Czabak-Garbacz
“An Evaluation of Utilizing Geometric Features for Wheat Grain Classification using X-ray Images”
■ **Computers and Electronics in Agriculture**, vol. 144, pp. 260-268, 2018.
- 2.36. P. Kulczycki, D. Kruszewski
“Identification of Atypical Elements by Transforming Task to Supervised Form with Fuzzy and Intuitionistic Fuzzy Evaluations”
■ **Applied Soft Computing**, vol. 60, pp. 623-633, 2017.

* In point 2, journals included in the list of *Journal Citation Reports (JCR)*, *Institute for Scientific Information, Thomson Reuters* are marked in bold.

- 2.35. P.A. Kowalski, P. Kulczycki
“Interval Probabilistic Neural Network”
■ **Neural Computing and Applications**, vol. 28, no. 4, pp. 817-834, 2017.
- 2.34. S. Lukasik, A. Moitinho, P.A. Kowalski, A. Falcão, R.A. Ribeiro, P. Kulczycki
“Survey of Object-Based Data Reduction Techniques in Observational Astronomy”
■ **Open Physics**, (Special Issue on Information Technology and Computational Physics), vol. 14, pp. 578-586, 2016.
- 2.33. K. Kulakowski, P. Kulczycki, K. Misztal, A. Dydejczyk, P. Gronek, M.J. Krawczyk
“Naming boys after presidents in U.S. in 20th century”
■ **Acta Physica Polonica A**, vol. 129, no. 5, pp. 1038-1044, 2016.
- 2.32. P.A. Kowalski, P. Kulczycki
“A Complete Algorithm for the Reduction of Pattern Data in the Classification of Interval Information”
■ **International Journal of Computational Methods**, vol. 13, no. 3, ID 1650018 (26 pages), 2016.
- 2.31. P. Kulczycki, M. Charytanowicz
“An algorithm for conditional multidimensional parameter identification with asymmetric and correlated losses of under- and overestimations”
■ **Journal of Statistical Computation and Simulation**, vol. 86, no. 5, pp. 1032-1055, 2016.
- 2.30. P. Kulczycki, M. Charytanowicz, A.L. Dawidowicz
“A Convenient Ready-to-Use Algorithm for a Conditional Quantile Estimator”
■ **Applied Mathematics & Information Sciences**, vol. 9, no. 2, pp. 841-850, 2015.
- 2.29. P. Kulczycki, P.A. Kowalski
“Bayes Classification for Nonstationary Patterns”
■ **International Journal of Computational Methods**, vol. 12, no. 2, ID 1550008 (19 pages), 2015.
- 2.28. P. Kulczycki, S. Lukasik
“An Algorithm for Reducing Dimension and Size of Sample for Data Exploration Procedures”
■ **International Journal of Applied Mathematics and Computer Science**, vol. 24, no. 1, pp. 133-149, 2014.
- 2.27. P. Kulczycki, M. Charytanowicz
“Conditional Parameter Identification with Different Losses of Under- and Overestimation”
■ **Applied Mathematical Modelling**, vol. 37, no. 4, pp. 2166-2177, 2013.
- 2.26. P. Kulczycki, M. Charytanowicz, P.A. Kowalski, S. Lukasik
“The Complete Gradient Clustering Algorithm: Properties in Practical Applications”
■ **Journal of Applied Statistics**, vol. 39, no. 6, pp. 1211-1224, 2012.
- 2.25. P. Kulczycki, P.A. Kowalski
“Bayes classification of imprecise information of interval type”
■ **Control and Cybernetics**, vol. 40, no. 1, pp. 101-123, 2011.
- 2.24. P. Kulczycki, M. Charytanowicz
“A Complete Gradient Clustering Algorithm Formed with Kernel Estimators”
■ **International Journal of Applied Mathematics and Computer Science**, vol. 20, no. 1, pp. 123-134, 2010.

- 2.23. P. Kulczycki, K. Daniel
“Metoda wspomagania strategii marketingowej operatora telefonii komorkowej”
■ *Przegląd Statystyczny*, vol. 56, no. 2, pp. 116-134, 2009; Errata: vol. 56, no. 3-4, p. 3, 2009.
- 2.22. P. Kulczycki, A. Mazgaj
“Parameter Identification for Asymmetrical Polynomial Loss Function”
■ **Information Technology and Control**, vol. 38, no. 1, pp. 51-60, 2009; Errata: vol. 38, no. 2, pp. 167-168, 2009.
- 2.21. P. Kulczycki
“Applicational Possibilities of Nonparametric Estimation of Distribution Density for Control Engineering”
■ **Bulletin of the Polish Academy of Sciences; Technical Sciences**, vol. 56, no. 4, pp. 347-359, 2008.
- 2.20. P. Kulczycki, M. Charytanowicz
“Asymmetrical Conditional Bayes Parameter Identification for Control Engineering”
■ **Cybernetics and Systems**, vol. 39, no. 3, pp. 229-243, 2008.
- 2.19. P. Kulczycki, A. Mazgaj
“An algorithm for Bayes parameter identification with quadratic asymmetrical loss function”
■ **Control and Cybernetics**, vol. 34, no. 4, pp. 1127-1148, 2005.
- 2.18. P. Kulczycki, J. Wąglowski
“On the application of statistical kernel estimators for the demand-based design of a wireless data transmission system”
■ **Control and Cybernetics**, vol. 34, no. 4, pp. 1149-1167, 2005.
- 2.17. P. Kulczycki, M. Charytanowicz
“Bayes sharpening of imprecise information”
■ **International Journal of Applied Mathematics and Computer Science**, vol. 15, no. 3, pp. 393-404, 2005.
- 2.16. R. Wisniewski, P. Kulczycki
“Slew maneuver control for spacecraft equipped with star camera and reaction wheels”
■ **Control Engineering Practice**, (Special Section on Aerospace Control), vol. 13, no. 3, pp. 349-356, 2005.
- 2.15. P. Kulczycki, R. Wisniewski, P.A. Kowalski, K. Krawiec
“Hard and soft sub-time-optimal controllers for a mechanical system with uncertain mass”
■ **Control and Cybernetics**, vol. 33, no. 4, pp. 573-587, 2004.
- 2.14. R. Wisniewski, P. Kulczycki
“Euler-Poincaré reduction of externally forced rigid body motion”
■ **Control and Cybernetics**, vol. 33, no. 2, pp. 297-310, 2004.
- 2.13. R. Wisniewski, P. Kulczycki
“Rotational Motion Control of a Spacecraft”
■ **IEEE Transactions on Automatic Control**, vol. 48, no. 4, pp. 643-646, 2003.
- 2.12. P. Kulczycki
“A Test for Comparing Distribution Functions with Strongly Unbalanced Samples”
■ *Statistica*, vol. LXII, no. 1, pp. 39-49, 2002.

- 2.11. P. Kulczycki
“Statistical Inference for Fault Detection: A Complete Algorithm Based on Kernel Estimators”
■ **Kybernetika**, vol. 38, no. 2, pp. 141-168, 2002.
- 2.10. P. Kulczycki, R. Wisniewski
“Fuzzy controller for a system with uncertain load”
■ **Fuzzy Sets and Systems**, vol. 131, no. 2, pp. 185-195, 2002.
- 2.9. P. Kulczycki
“An Algorithm for Bayes Parameter Identification”
■ **Journal of Dynamic Systems, Measurement, and Control**, (Special Issue on the Identification of Mechanical Systems), vol. 123, no. 4, pp. 611-614, 2001.
- 2.8. P. Kulczycki
“Fuzzy Controller for Mechanical Systems”
■ **IEEE Transactions on Fuzzy Systems**, vol. 8, no. 5, pp. 645-652, 2000.
- 2.7. P. Kulczycki
“Random time-optimal control for mechanical systems”
■ **European Journal of Automation**, vol. 33, no. 1-2, pp. 115-140, 1999.
- 2.6. P. Kulczycki
“A Random Approach to Time-Optimal Control”
■ **Journal of Dynamic Systems, Measurement, and Control**, vol. 121, no. 3, pp. 542-543, 1999.
- 2.5. H. Schioler, P. Kulczycki
“Neural Network for Estimating Conditional Distributions”
■ **IEEE Transactions on Neural Networks**, vol. 8, no. 5, pp. 1015-1025, 1997.
- 2.4. P. Kulczycki
“Some Remarks on Solutions of Discontinuous Differential Equations Applied in Automatic Control”
■ **Industrial Mathematics**, vol. 46, no. 2, pp. 119-128, 1996.
- 2.3. P. Kulczycki
“Almost certain time-optimal positional control”
■ **IMA Journal of Mathematical Control and Information**, vol. 13, no. 1, pp. 63-77, 1996.
- 2.2. P. Kulczycki
“Time-optimal stabilization of a discontinuous and non-autonomous dynamic object”
■ **Control and Cybernetics**, vol. 25, no. 4, pp. 707-720, 1996.
- 2.1. A.L. Dawidowicz, P. Kulczycki, D. Tumidajowicz
“A Stochastic Model of the Development of Alpine Rhododendron”
■ **Universitatis Iagellonicae Acta Mathematica**, vol. XXXII, pp. 37-55, 1995.

3. Chapters in edited volumes (selected items):

- 3.27. P. Kulczycki, D. Kruszewski
“Detection of Atypical Elements by Transforming to Supervised Form”
■ “Pattern Intelligence and Machine Learning”, B.U. Shankar, K. Ghosh, D.P. Mandal, S.S. Ray, D. Zhang, S.K. Pal (eds.), **Lecture Notes in Computer Science**, **Springer**, Cham, 2017, pp. 458-466.

- 3.26. P. Kulczycki, D. Kruszewski
“Detection of atypical elements with fuzzy and intuitionistic fuzzy evaluations”
■ “Trends in Advanced Intelligent Control, Optimization and Automation”, W. Mitkowski, J. Kacprzyk, K. Oprzedkiewicz, P. Skrush (eds.), **Springer**, Cham, 2017, pp. 774-786.
- 3.25. P. Kulczycki, M. Charytanowicz, P.A. Kowalski, S. Lukasik
“Atypical (Rare) Elements Detection – A Conditional Nonparametric Approach”
■ “Computational Modeling of Objects Represented in Images: Fundamentals, Methods, and Applications”, R.P. Barneva, V.E. Brimkov, J.M.R.S. Tavares (eds.), Lecture Notes in Computer Science, **Springer**, Cham, 2017, pp. 56-64.
- 3.24. P. Kulczycki, P.A. Kowalski
“A Metaheuristic for Classification of Interval Data in Changing Environments”
■ “Information Technology and Computational Physics”, P. Kulczycki, L.T. Koczy, R. Mesiar, J. Kacprzyk (eds.), **Springer**, Cham, 2017, pp. 19-34.
- 3.23. M. Charytanowicz, J. Niewczas, P. Kulczycki, P.A. Kowalski, S. Lukasik
“Discrimination of wheat grain varieties using X-ray images”
■ “Information Technologies in Medicine”, E. Pietka, P. Badura, J. Kawa, W. Wieclawek (eds.), **Springer**, Berlin, 2016, pp. 39-50.
- 3.22. P. Kulczycki, P.A. Kowalski
“Classification of Interval Information with Data Drift”
■ “Modeling and Using Context”, H. Christiansen, I. Stojanovic, G.A. Papadopoulos (eds.), Lecture Notes in Computer Science, **Springer**, Berlin, 2015, pp. 495-500.
- 3.21. P. Kulczycki, M. Charytanowicz
“Warunkowa wielowymiarowa identyfikacja wartosci parametrow przy niesymetrycznych i skorelowanych stratach bledów estymacji”
■ “Aktualne problemy automatyki i robotyki”, K. Malinowski, J. Jozefczyk, J. Swiatek (eds.), Komitet Automatyki i Robotyki PAN, EXIT, Warsaw, 2014, pp. 656-667.
- 3.20. P. Kulczycki, M. Charytanowicz
“Conditional Multidimensional Parameter Identification with Asymmetric Correlated Losses of Estimation Errors”
■ “Neural Information Processing”, C.K. Loo, K.S. Yap, K.W. Wong, A. Teoh, K. Huang (eds.), Lecture Notes in Computer Science, **Springer**, Berlin, 2014, vol. II, pp. 287-294.
- 3.19. M. Charytanowicz, P. Kulczycki
“An Image Analysis Algorithm for Soil Structure Identification”
■ “Intelligent Systems'2014”, D. Filev, J. Jablkowski, J. Kacprzyk, I. Popchev, L. Rutkowski, V. Sgurev, E. Sotirova, P. Szynkarczyk, S. Zadrozny (eds.), **Springer**, Berlin, 2014, pp. 681-692.
- 3.18. P.A. Kowalski, P. Kulczycki
“Neural Classification for Interval Information”
■ „Artificial Intelligence: Methodology, Systems, and Applications”, G. Agre, P. Hitzler, A.A. Krisnadhi, S.O. Kuznetsov (red.), Lecture Notes in Computer Science, **Springer**, Berlin, 2014, pp. 206-213.

- 3.17. P. Kulczycki, S. Lukasik
“Reduction of Dimension and Size of Data Set by Parallel Fast Simulated Annealing”
■ “Issues and Challenges of Intelligent Systems and Computational Intelligence”, L.T. Koczy, C. Pozna, J. Kacprzyk (eds.), **Springer**, Berlin, 2014, pp. 273-290.
- 3.16. P. Kulczycki, P.A. Kowalski
“Bayesian Classification of Interval-Type Information”
■ “Issues and Challenges of Intelligent Systems and Computational Intelligence”, L.T. Koczy, C. Pozna, J. Kacprzyk (eds.), **Springer**, Berlin, 2014, pp. 259-271.
- 3.15. P. Kulczycki, M. Charytanowicz, P.A. Kowalski, S. Lukasik
“Exemplary Applications of the Complete Gradient Clustering Algorithm in Bioinformatics, Management and Engineering”
■ “Issues and Challenges of Intelligent Systems and Computational Intelligence”, L.T. Koczy, C. Pozna, J. Kacprzyk (eds.), **Springer**, Berlin, 2014, pp. 119-132.
- 3.14. P. Kulczycki, P.A. Kowalski
“An Algorithm of Classification for Nonstationary Case”
■ “Advances in Artificial Intelligence and Its Applications”, F. Castro, A. Gelbukh, M.G. Mendoza (eds.), Lecture Notes in Computer Science, **Springer**, Berlin, 2013, vol. II, pp. 301-313.
- 3.13. S. Lukasik, P. Kulczycki
“Using Topology Preservation Measures for Multidimensional Intelligent Data Analysis in the Reduced Feature Space”
■ “Artificial Intelligence and Soft Computing”, L. Rutkowski, M. Korytkowski, R. Scherer, R. Tadeusiewicz, L.A. Zadeh, J.M. Zurada (eds.), Lecture Notes in Computer Science, **Springer**, Berlin, 2013, vol. II, pp. 184-193.
- 3.12. P. Kulczycki, M. Charytanowicz
“Conditional Parameter Identification with Asymmetrical Losses of Estimation Errors”
■ “Computational Collective Intelligence. Technologies and Applications”, N.T. Nguyen, K. Hoang, P. Jedrzejowicz (eds.), Lecture Notes in Computer Science, **Springer**, Berlin, 2012, vol. I, pp. 553-562.
- 3.11. S. Lukasik, P. Kulczycki
“An Algorithm for Sample and Data Dimensionality Reduction Using Fast Simulated Annealing”
■ “Advanced Data Mining and Applications”, J. Tang, I. King, L. Chen, J. Wang (eds.), Lecture Notes in Computer Science, **Springer**, Berlin, 2011, vol. I, pp. 152-161.
- 3.10. P. Kulczycki, M. Charytanowicz
“A Complete Gradient Clustering Algorithm”
■ “Artificial Intelligence and Computational Intelligence”, H. Deng, D. Miao, J. Lei, F.L. Wang (eds.), Lecture Notes in Computer Science, **Springer**, Berlin, 2011, vol. III, pp. 497-504.
- 3.9. P. Kulczycki, M. Charytanowicz
“Warunkowa bayesowska identyfikacja parametryczna z niesymetrycznymi stratami”
■ “Postepy automatyki i robotyki”, K. Malinowski, R. Dindorf (eds.), Komitet Automatyki i Robotyki PAN, WPS, Kielce, 2011, vol. 1, pp. 107-122.

- 3.8. P.A. Kowalski, P. Kulczycki
“Data Sample Reduction for Classification of Interval Information Using Neural Network Sensitivity Analysis”
■ “Artificial Intelligence: Methodology, Systems, and Applications”, D. Dicheva, D. Dochev (eds.), Lecture Notes in Computer Science, **Springer**, Berlin, 2010, pp. 271-272.
- 3.7. M. Charytanowicz, J. Niewczas, P. Kulczycki, P.A. Kowalski, S. Lukasik, S. Zak
“Complete Gradient Clustering Algorithm for Features Analysis of X-ray Images”
■ “Information Technologies in Biomedicine”, E. Pietka, J. Kawa (eds.), **Springer**, Berlin, 2010, vol. 2, pp. 15-24.
- 3.6. M. Charytanowicz, P. Kulczycki
“Nonparametric Regression for Analyzing Correlation between Medical Parameters”
■ “Information Technologies in Biomedicine”, E. Pietka, J. Kawa (eds.), **Springer**, Berlin, 2008, pp. 437-444.
- 3.5. P. Kulczycki, M. Charytanowicz
“Kompletny algorytm gradientowej klasteryzacji”
■ “Sterowanie i automatyzacja: aktualne problemy i ich rozwiązania”, Komitet Automatyki i Robotyki PAN, K. Malinowski, L. Rutkowski (eds.), EXIT, Warsaw, 2008, pp. 312-321.
- 3.4. P. Kulczycki
“Kernel Estimators in Industrial Applications”
■ “Soft Computing Applications in Industry”, B. Prasad (ed.), **Springer**, Berlin, 2008, pp. 69-91.
- 3.3. P. Kulczycki
“Estymatory jądrowe w zagadnieniach badan systemowych”
■ “Techniki informacyjne w badaniach systemowych”, P. Kulczycki, O. Hryniewicz, J. Kacprzyk (eds.), **WNT**, Warsaw, 2007, pp. 79-105.
- 3.2. P. Kulczycki
“Robust time-optimal positional stabilization containing a speed limitation task”
■ “System Structure and Control 1995”, M. Guglielmi (ed.), **Elsevier/Pergamon**, Oxford, 1996, pp. 349-354.
- 3.1. P. Kulczycki
“On the Synthesis of Time-Optimal Positional Controller”
■ “Systems Science and Systems Engineering”, Z. Weimin (ed.), International Academic Publishers, Beijing, 1993, pp. 489-494.

4. Participation at scientific conferences (selected items):

- 4.47. P. Kulczycki, D. Kruszewski
“Detection of atypical elements by transforming to supervised form”
■ Seventh International Conference on Pattern Recognition and Machine Intelligence, Kolkata (India), 5-8 December 2017, proceedings: 3.27.
- 4.46. P. Kulczycki, D. Kruszewski
“Detection of atypical elements with fuzzy and intuitionistic fuzzy evaluations”
■ XIX Krajowa Konferencja Automatyki, Krakow (Poland), 18-21 June 2017, proceedings: 3.26.

- 4.45. P.A. Kowalski, S. Lukasik, M. Charytanowicz, P. Kulczycki
“Comparison of Krill Herd Algorithm and Flower Pollination Algorithm in Clustering Task”
■ 8th European Symposium on Computational Intelligence and Mathematics, Sofia (Bulgaria), 5-8 October 2016, vol. „Book of Abstracts” p. 10-11, pendrive: pp. 31-36; post-proceedings: in press.
- 4.44. P. Kulczycki, M. Charytanowicz, P.A. Kowalski, S. Lukasik
“Atypical (Rare) Elements Detection – A Conditional Nonparametric Approach”
■ Computational Modeling of Objects Presented in Images: Fundamentals, Methods, and Applications, Niagara Falls (USA), 21-23 September 2016, pre-proceedings: p. 10; post-proceedings: point 3.25 stated above.
- 4.43. M. Charytanowicz, J. Niewczas, P. Kulczycki, P.A. Kowalski, S. Lukasik
“Discrimination of wheat grain varieties using X-ray images”
■ 5th International Conference on Information Technologies in Biomedicine, Kamien Śląski (Poland), 20-22 June 2016, proceedings: 3.23.
- 4.42. K. Kulakowski, P. Kulczycki, K. Misztal, A. Dydejczyk, P. Gronek, M.J. Krawczyk
“No more presidents in my family”
■ Eight Polish Symposium on Econo- and Sociophysics, Rzeszow (Poland), 4-6 November 2015, vol. „Book of Abstracts”, p. 25; post-proceedings: point 2.33 stated above.
- 4.41. P. Kulczycki, P.A. Kowalski
“Classification of Interval Information with Data Drift”
■ The Ninth International & Interdisciplinary Conference on Modeling and Using Context, Larnaka (Cyprus), 2-6 November 2015, proceedings: 3.30.
- 4.40. P. Kulczycki, M. Charytanowicz
“Conditional Multidimensional Parameter Identification with Asymmetric Correlated Losses of Estimation Errors”
■ 21st International Conference on Neural Information Processing, Kuching (Malesia), 3-6 November 2014, vol. “Programme & Abstracts”, p. 102, proceedings: point 3.20 stated above.
- 4.39. M. Charytanowicz, P. Kulczycki
“An Image Analysis Algorithm for Soil Structure Identification”
■ IEEE Intelligent Systems, Warsaw (Poland), 24-26 September 2014, proceedings: point 3.19 stated above.
- 4.38. P.A. Kowalski, P. Kulczycki
“Neural Classification for Interval Information”
■ 16th International Conference on Artificial Intelligence: Methodology, Systems, Applications, Varna (Bulgaria), 11-13 September 2014, proceedings: point 3.18 stated above.
- 4.37. P. Kulczycki, M. Charytanowicz
“Warunkowa wielowymiarowa identyfikacja wartosci parametrow przy niesymetrycznych i skorelowanych stratach bledow estymacji”
■ XVIII Krajowa Konferencja Automatyki, Wroclaw (Poland), 8-10 September 2014, CD: 62 (12 pages); post-proceedings: point 3.21 stated above.

- 4.36. P. Kulczycki, P.A. Kowalski
“An Algorithm of Classification for Nonstationary Case”
■ 12th Mexican International Conference on Artificial Intelligence, Mexico City (Mexico), 24-30 November 2013, proceedings: point 3.14 stated above.
- 4.35. S. Lukasik, P. Kulczycki
“Using Topology Preservation Measures for Multidimensional Intelligent Data Analysis in the Reduced Feature Space”
■ 12th International Conference – Artificial Intelligence and Soft Computing, Zakopane (Poland), 9-13 June 2013, proceedings: point 3.13 stated above.
- 4.34. P. Kulczycki, M. Charytanowicz
“Conditional Parameter Identification with Asymmetrical Losses of Estimation Errors”
■ 4th International Conference on Computational Collective Intelligence Technologies and Applications, Ho Chi Minh City (Vietnam), 28-30 November 2012, post-proceedings: point 3.12 stated above.
- 4.33. P. Kulczycki, S. Lukasik
“Reduction of Dimension and Size of Data Set by Parallel Fast Simulated Annealing”
■ First Hungarian-Polish Joint Conference on Computational Intelligence, Gyor (Hungary), 24-26 September 2012, pp. 112-116; post-proceedings: point 3.17 stated above.
- 4.32. P. Kulczycki, P.A. Kowalski
“Bayesian Classification of Interval-Type Information”
■ First Hungarian-Polish Joint Conference on Computational Intelligence, Gyor (Hungary), 24-26 September 2012, pp. 108-111; post-proceedings: point 3.16 stated above.
- 4.31. P. Kulczycki, M. Charytanowicz, P.A. Kowalski, S. Lukasik
“Exemplary Applications of the Complete Gradient Clustering Algorithm in Bioinformatics, Management and Engineering”
■ First Hungarian-Polish Joint Conference on Computational Intelligence, Gyor (Hungary), 24-26 September 2012, pp. 102-106; post-proceedings: point 3.15 stated above.
- 4.30. S. Lukasik, P. Kulczycki
“An Algorithm for Sample and Data Dimensionality Reduction Using Fast Simulated Annealing”
■ 7th International Conference on Advanced Data Mining and Applications, Beijing (China), 17-19 December 2011, proceedings: 3.11 stated above.
- 4.29. P. Kulczycki, M. Charytanowicz
“A Complete Gradient Clustering Algorithm”
■ The 2011 International Conference on Artificial Intelligence and Computational Intelligence, Taiyuan (China), 24-25 September 2011, post-proceedings: point 3.10 stated above.
- 4.28. P. Kulczycki, M. Charytanowicz
“Warunkowa bayesowska identyfikacja parametryczna z niesymetrycznymi stratami”
■ XVII Krajowa Konferencja Automatyki, Kielce (Poland), 19-22 June 2011, pp. 215-226, vol. “Abstracts” pp. 55-56; post-proceedings: point 3.9 stated above.

- 4.27. P. Kulczycki
“Data Analysis and Exploration for a Fault Detection, Diagnosis, and Prognosis System”
■ IEEE International Energy Conference & Exhibition, Manama (Bahrain), 18-22 December 2010, CD: 1569326787 (6 pages).
- 4.26. P.A. Kowalski, P. Kulczycki
“Data Sample Reduction for Classification of Interval Information Using Neural Network Sensitivity Analysis”
■ 14th International Conference on Artificial Intelligence: Methodology, Systems, and Applications, Varna (Bulgaria), 8-10 September 2010, post-proceedings: point 3.8 stated above.
- 4.25. M. Charytanowicz, J. Niewczas, P. Kulczycki, P.A. Kowalski, S. Lukasik, S. Zak
“Complete Gradient Clustering Algorithm for Features Analysis of X-ray Images”
■ 2nd International Conference on Information Technologies in Biomedicine, Kamien Slaski (Poland), 7-9 June 2010, post-proceedings: point 3.7 stated above.
- 4.24. P. Kulczycki, R. Wisniewski, P.A. Kowalski, K. Krawiec
“Hard and Soft Sub-Time-Optimal Robust Controllers”
■ 9th IFAC Symposium on Robot Control, Gifu (Japan), 9-12 September 2009, pp. 689-694, CD: S1A1 (6 pages).
- 4.23. P. Kulczycki, A. Mazgaj
“Bayes Parameter Identification with Polynomial Asymmetrical Loss Function”
■ 17th World Congress IFAC, Seoul (South Korea), 6-11 July 2008, pp. 12395-12400, vol. “Final Program & Book of Abstracts” Thursday p. 211, CD: 12395 (6 pages).
- 4.22. M. Charytanowicz, P. Kulczycki
“Nonparametric Regression for Analyzing Correlation between Medical Parameters”
■ I International Conference on Information Technologies in Biomedicine, Kamien Slaski (Poland), 16-18 June 2008, post-proceedings: point 3.6 stated above.
- 4.21. P. Kulczycki, M. Charytanowicz
“Kompletny algorytm gradientowej klasteryzacji”
■ XVI Krajowa Konferencja Automatyki, Szczyrk (Poland), 11-15 May 2008, CD: pol_06_rozdzial4, pp. 40-49; post proceedings: point 3.5 stated above.
- 4.20. P. Kulczycki, A. Mazgaj
“Bayes Identification of Parameters’ Vector with Quadratic Asymmetrical Loss Function”
■ 19th International Conference on Production Research, Valparaiso (Chile), 29 July – 2 August 2007, CD: 250 (6 pages).
- 4.19. P. Kulczycki, A. Mazgaj
“A Parameter Identification Algorithm for Control Tasks with Asymmetrical Quadratic Losses of Estimation Errors”
■ 6th Asian Control Conference, Bali (Indonesia), 18-21 July 2006, vol. “Abstracts” p. 99, CD: ASCC2006420023 (6 pages).
- 4.18. P. Kulczycki, J. Wąglowski
“Optymalny układ stacji bazowych bezprzewodowego systemu transmisji danych LMDS”
■ XV Krajowa Konferencja Automatyki, Warsaw (Poland), 27-30 June 2005, vol. 2, pp. 351-356, CD: tom II, rozdział XIII/6 (6 pages).

- 4.17. P. Kulczycki
“Kernel Estimators for Systems Research”
■ 3rd International Conference on Disordered Systems, Goa (India), 24-26 September 2004, vol. “Abstract Book”, p. 42.
- 4.16. P. Kulczycki
“Kernel Estimators for Analysis of Systems with Fuzzy Uncertainty”
■ IEEE International Conference on Fuzzy Systems, Budapest (Hungary), 25-29 July 2004, vol. “Program” p. 175, CD: 0207-1354 (6 pages).
- 4.15. P. Kulczycki, J. Waglowski
“Optimal Base-Stations Locations in the LMDS Wireless Data Transmission System”
■ First African Control Conference, Cape Town (South Africa), 3-5 December 2003, pp. 375-380, CD: 108 (6 pages).
- 4.14. P. Kulczycki
“Bayes Parameter Identification with Reference to Nonlinear Optimal Control”
■ 15th World Congress IFAC, Barcelona (Spain), 21-26 July 2002, vol. “Book of Abstracts” p. 244, CD: 1329 (6 pages).
- 4.13. R. Wisniewski, P. Kulczycki
“General Attitude Control Algorithm for Spacecraft Equipped with Star Camera and Reaction Wheels”
■ 15th World Congress IFAC, Barcelona (Spain), 21-26 July 2002, vol. “Book of Abstracts” p. 151, CD: 1786 (6 pages).
- 4.12. P. Kulczycki
“Układ wnioskowania statystycznego dla potrzeb wykrywania uszkodzeń w systemach dynamicznych”
■ XIV Krajowa Konferencja Automatyki, Zielona Gora (Poland), 24-27 czerwca 2002, vol. I, pp. 555-560.
- 4.11. P. Kulczycki
“A Fuzzy Approach for Mechanical Systems with Uncertain Load”
■ European Control Conference, Porto (Portugal), 4-7 September 2001, pp. 2658-2663, vol. “Abstracts” p. 118, CD: ecc4561 (6 pages).
- 4.10. P. Kulczycki
“A Statistical Inference System for Fault Detection”
■ 4th IFAC Workshop on On-line Fault Detection and Supervision in the Chemical Process Industries, Jejudo Island (South Korea), 7-8 June 2001, pp. 245-250.
- 4.9. P. Kulczycki
“Time-Optimal Control via Random Differential Inclusions”
■ 6th IFAC Symposium on Dynamics and Control of Process Systems, Jejudo Island (South Korea), 4-6 June 2001, pp. 708-713.
- 4.8. P. Kulczycki
“A Statistical Fault Detection System”
■ 16th IMACS World Congress on Scientific Computation, Applied Mathematics and Simulation, Lausanne (Switzerland), 21-25 August 2000, vol. “Abstracts” p. 317, CD: 216-4 (6 pages).

- 4.7. P. Kulczycki
“Robust Controller for Fuzzy Mechanical Systems”
■ 14th World Congress IFAC, Beijing (China), 5-9 July 1999, vol. K, pp. 195-200, CD: K-3e-09-4 (6 pages).
- 4.6. P. Kulczycki, H. Schioler
“Estimating Conditional Distributions by Neural Networks”
■ IEEE World Congress on Computational Intelligence,
IEEE International Joint Conference on Neural Networks, Anchorage (USA), 4-9 May 1998, vol. 2, pp. 1344-1349, CD: J0246J (6 pages).
- 4.5. P. Kulczycki, L.T. Koczy
“A Fuzzy Approach to Time-Optimal Control”
■ IEEE World Congress on Computational Intelligence,
IEEE International Conference on Fuzzy Systems, Anchorage (USA), 4-9 May 1998, vol. 1, pp. 410-415, CD: F073 (6 pages).
- 4.4. P. Kulczycki
“Bayes Estimation Using Kernel Estimators”
■ 15th IMACS World Congress on Scientific Computation, Modelling and Applied Mathematics, Berlin (Germany), 24-29 August 1997, vol. “Abstracts” p. 118, vol. 1 (Computational Mathematics), pp. 627-632, CD: vol_I/P_627 (6 pages).
- 4.3. P. Kulczycki
“Robust Time-Optimal Positional Stabilization Containing a Speed Limitation Task”
■ IFAC Conference on System Structure and Control, Nantes (France), 5-7 July 1995, pp. 382-387; post-proceedings: point 3.2 stated above.
- 4.2. P. Kulczycki, H. Schioler
“Parameter Identification by Bayes Decision and Neural Networks”
■ 10th IFAC Symposium on System Identification, Copenhagen (Denmark), 4-6 July 1994, vol. 3, pp. 477-482.
- 4.1. P. Kulczycki
“Time-Optimal Stochastic Positional Control”
■ 12th World Congress IFAC, Sydney (Australia), 18-23 July 1993, vol. 7, pp. 443-448.

5. Supervised doctoral theses:

- 5.7. D. Kruszewski, “Nieparametryczna procedura wykrywania elementów rzadko występujących”, supervisor P. Kulczycki.
■ Polish Academy of Sciences, Systems Research Institute, research field: computer science, commencement of procedure 26 June 2015, conferred of degree 9 December 2016.
- 5.6. S. Lukasik, “Algorytm wymiaru i liczności próby dla celów procedur eksploracyjnej analizy danych”, supervisor P. Kulczycki.
■ Polish Academy of Sciences, Systems Research Institute, research field: computer science, commencement of procedure 20 June 2008, conferred of degree 9 March 2012, **with honors**.

- 5.5. P.A. Kowalski, “Klasyfikacja bayesowska informacji niedokładnej typu przedziałowego”, supervisor P. Kulczycki.
■ Polish Academy of Sciences, Systems Research Institute, research field: computer science, commencement of procedure 27 March 2007, conferred of degree 4 December 2009.
- 5.4. K. Daniel, “Metoda wspomagania strategii marketingowej operatora telefonii komarkowej”, supervisor P. Kulczycki.
■ Polish Academy of Sciences, Systems Research Institute, research field: computer science, commencement of procedure 23 June 2006, conferred of degree 20 March 2009.
- 5.3. M. Charytanowicz, “Bayesowska determinizacja informacji nieprecyzyjnej w zagadnieniach medycznych”, supervisor P. Kulczycki.
■ Polish Academy of Sciences, Systems Research Institute, research field: computer science, commencement of procedure 25 September 2002, conferred of degree 10 June 2005, **with honors**.
- 5.2. A. Mazgaj, “Modelowanie niepewności parametrów obiektu dla potrzeb sterowania optymalnego”, supervisor P. Kulczycki.
■ AGH University of Science and Technology, Faculty of Electrical Engineering, Automatic Control, Computer Science, and Electronics, research field: automatic control, commencement of procedure 30 January 2003, conferred of degree 28 April 2005, **with honors**.
- 5.1. J. Wąglowski, “Metoda planowania optymalnego układu stacji bazowych bezprzewodowego systemu transmisji danych LMDS”, supervisor P. Kulczycki.
■ Polish Academy of Sciences, Systems Research Institute, research field: automatic control, commencement of procedure 12 April 2002, conferred of degree 26 January 2005, **with honors**.