

01-Nov-16



CURRICULUM VITAE

PERSONAL BACKGROUND

Last name: Łukasik
First name: Szymon
Birth: April 22nd 1981, Szczawnica, Poland
Nationality: Polish
E-mail: slukasik@ibspan.waw.pl, slukasik@agh.edu.pl

PROFESSIONAL EXPERIENCE

- 10.2014 –** assistant professor at the Faculty of Physics and Applied Computer Science, AGH University of Science and Technology.
- 07.2012 –** assistant professor at the Systems Research Institute, Polish Academy of Sciences (at the Institute since 11.2007).
- 11.2012 – 09.2014** assistant professor at the Department of Automatic Control, Faculty of Electrical and Computer Engineering, Cracow University of Technology (at the Department since 11.2005).
- 10.2004 – 06.2005** student-assistant at the Department of Automatic Control, Faculty of Electrical and Computer Engineering, Cracow University of Technology.
- 07.2004** internship at the ATLAS Experiment Department, Henryk Niewodniczanski Nuclear Physics Institute.
- 09.2003 – 06.2004** computer network administrator at the Institute of Computational Civil Engineering, Faculty of Civil Engineering, Cracow University of Technology.
- 07.2003** computer network administrator assistant (internship) at the Department of Medical Radiation Physics, Stockholm University.

EDUCATIONAL BACKGROUND

- 04.2013-07.2013** Program in Management, Innovation and Research Commercialization at Haas School of Business, University of California Berkeley (Polish Ministry of Science and Higher Education project “Top 500 Innovators Science, Management, Commercialization”)
- 2012** Systems Research Institute, Polish Academy of Sciences, PhD in Computer Science, with distinction.
Thesis: *Data dimensionality and sample size reduction for exploratory data analysis tasks [in Polish]*.
- 2003 – 2006** Cracow University of Technology, Faculty of Electrical and Computer Engineering, MSc studies in Automatic Control
Thesis: *Identification of probabilistic density function in real-world systems using kernel density estimation [in Polish]*, grade: very good.
- 2000 – 2005** Cracow University of Technology, Faculty of Electrical and Computer Engineering, MSc studies in Computer Science,
Thesis: *Software for testing device designed for multichannel high-voltage power supplies used in silicon detectors of ATLAS experiment at CERN [in Polish]*, grade: very good, with distinction.

FOREIGN SCHOLARSHIPS AND STUDY VISITS

- 07-2015-10.2015** Postdoctoral fellow, Computational Intelligence Research Group, UNINOVA.
- 04-2013-07.2013** Visiting scholar, University of California Berkeley.
- 04.2012-07.2012** Postdoctoral fellow, National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences.
- 06.2010** Visiting researcher, Institut de Recherches Interdisciplinaires et de Développements en Intelligence Artificielle, Université Libre de Bruxelles.
- 07.2005** Czech Government scholarship, Czech Technical University in Prague, Center for Machine Perception.
- 04.2005** Slovakian Government scholarship, Technical University of Bratislava, Department of Mathematics.
- 04.2004** Slovakian Government scholarship, Technical University of Bratislava, Department of Mathematics.
- 04.2003** Czech Government scholarship, Czech Technical University in Prague, Center for Machine Perception.

LANGUAGES SPOKEN

English	C2 level, Cambridge Certificate in Advanced English with honors;
Chinese	basic;
French	basic.

EXTRACULLICULAR INTERESTS

History of the Roman Empire, Indie rock music, Formula 1 racing.

SCIENTIFIC ACTIVITY

A. EXPERT AND SCIENTIFIC PUBLISHING DUTIES

A.1. Professional Expert

- European Commission, Horizon 2020 expert (2016-)
- National Centre for Research and Development, expert (2013-)
- “Technology Perspective Krakow-Malopolska 2020” (EU co-funded, 2010)
- “Foresight: automatic control, robotics, measurement technology” (EU co-funded, 2009)

A.2. Reviewer

- “Applied Soft Computing” journal (SCI indexed)
- “Control and Cybernetics” (SCI indexed)
- “Fuzzy Sets and Systems” (SCI indexed)
- “IET Computer Vision” journal (SCI indexed)
- “Information Sciences” journal (SCI indexed)
- “International Journal of Applied Mathematics and Computer Science” (SCI indexed)
- “Journal of Intelligent and Fuzzy Systems” (SCI indexed)
- “Journal of Applied Statistics” (SCI indexed)
- “Knowledge-Based Systems” (SCI indexed)
- “Neural Computing and Applications” (SCI indexed)
- “Soft Computing” (SCI indexed)

A.3. Editor

- “Journal of Advanced Computing”
- “Technical Transactions: Automatic Control” (until 2014)

B. BOOKS AND MONOGRAPHS

B.1. P. Kulczycki, L.T. Koczy, R. Mesiar, J. Kacprzyk (eds.); S. Łukasik (co-editor), „Information Technology and Computational Physics”

- Springer, Berlin, 2016, in print.

B.2. P. Kulczycki, P.A. Kowalski, S. Łukasik (eds.)

“Information Technology, Computational and Experimental Physics”

- AGH University of Science and Technology Press, 2016.

B.3. S. Łukasik

“Algorithm Of Data Sample and Dimensionality Reduction for Exploratory Data Analysis Procedures” [in Polish]

- Wydawnictwo Politechniki Krakowskiej, 2013.

C. JOURNAL PAPERS AND BOOK CHAPTERS

- C.1. S. Łukasik, A. Moitinho, P.A. Kowalski, A. Falcão, R.A. Ribeiro, P. Kulczycki
„Survey of Object-Based Data Reduction Techniques in Observational Astronomy”
■ Open Physics (accepted for publication).
- C.2. P.A. Kowalski, S. Łukasik
“Training Neural Networks with Krill Herd Algorithm”
■ Neural Processing Letters, vol. 44, pp. 5-17, 2016.
- C.3. D. Domańska, S. Łukasik
“Handling high-dimensional data in air pollution forecasting tasks”
■ Ecological Informatics, vol. 34, pp. 70-91, 2016.
- C.4. M. Charytanowicz, J. Niewczas, P. Kulczycki, P.A. Kowalski, S. Łukasik
“Discrimination of Wheat Grain Varieties Using X-Ray Images”
■ Information Technologies in Biomedicine, E. Pietka, P. Badura, J. Kawa, W. Wieclawek (eds.), Springer-Verlag, Berlin-Heidelberg, 2016, pp. 39-50.
- C.5. S. Łukasik, P.A. Kowalski
“Study of Flower Pollination Algorithm for Continuous Optimization”
■ Intelligent Systems' 2014, P. Angelov et al. (eds.), Springer, pp. 451-459, 2015.
- C.6. P.A. Kowalski, S. Łukasik
“Experimental Study of Selected Parameters of the Krill Herd Algorithm”
■ Intelligent Systems' 2014, P. Angelov et al. (eds.), Springer, pp. 473-485, 2015.
- C.7. P. Kulczycki, S. Łukasik
“An Algorithm for Reducing Dimension and Size of Sample for Data Exploration Procedures”
■ International Journal of Applied Mathematics and Computer Science, vol. 24, pp. 133-149, 2014.
- C.8. P. Kulczycki, M. Charytanowicz, P.A. Kowalski, S. Łukasik
“Exemplary Applications of the Complete Gradient Clustering Algorithm in Bioinformatics, Management and Engineering”
■ „Issues and Challenges of Intelligent Systems and Computational Intelligence”, L.T. Kóczy, C. Pozna, J. Kacprzyk (eds.), Springer, pp. 119-132, 2014.
- C.9. P. Kulczycki, S. Łukasik
“Reduction of Dimension and Size of Data Set by Parallel Fast Simulated Annealing”
■ „Issues and Challenges of Intelligent Systems and Computational Intelligence”, L.T. Kóczy, C. Pozna, J. Kacprzyk (eds.), Springer, pp. 273-290, 2014.

- C.10. S. Łukasik, P. Kulczycki
“Using Topology Preservation Measures for Multidimensional Intelligent Data Analysis in the Reduced Feature Space”
■ Lecture Notes in Artificial Intelligence, vol. 7895, pp. 184-193, 2013.
- C.11. S. Łukasik, M. Haręza, M. Kaczor
“Document content mining for authors’ identification task”
■ Technical Transactions: Automatic Control, vol. 1-AC, pp. 3-15, 2013.
- C.12. P. Kulczycki, M. Charytanowicz, P.A. Kowalski, S. Łukasik
“The Complete Gradient Clustering Algorithm: Properties in Practical Applications”
■ Journal of Applied Statistics, vol. 39, pp. 1211-1224, 2012.
- C.13. S. Łukasik, P. Kulczycki
“Using Topology Preservation Measures for High-Dimensional Data Analysis in the Reduced Feature Space” [in Polish]
■ Czasopismo Techniczne Politechniki Krakowskiej, seria: Automatyka, vol. 1-AC, pp. 5-16, 2012.
- C.14. D. Falkiewicz, S. Łukasik
“Fuzzy modelling algorithm with Particle Swarm Optimization” [in Polish]
■ Czasopismo Techniczne Politechniki Krakowskiej, seria: Automatyka, vol. 1-AC, pp. 41-54, 2012.
- C.15. S. Łukasik, P. Kulczycki
“An Algorithm for Sample and Data Dimensionality Reduction Using Fast Simulated Annealing”
■ Lecture Notes in Artificial Intelligence, vol. 7120, pp. 152-161, 2011.
- C.16. M. Dziejczak, S. Łukasik
“Differential Evolution in Hard-Constrained Clustering” [in Polish]
■ Czasopismo Techniczne Politechniki Krakowskiej, seria: Elektrotechnika, vol. 1-E, pp. 3-20, 2010.
- C.17. M. Charytanowicz, J. Niewczas, P. Kulczycki, P.A. Kowalski, S. Łukasik, S. Żak
“A Complete Gradient Clustering Algorithm for Features Analysis of X-ray Images”
■ Information Technologies in Biomedicine, Ewa Pietka, Jacek Kawa (eds.), Springer-Verlag, Berlin-Heidelberg, 2010, pp. 15-24.
- C.18. S. Łukasik, M. Wicha, P. Kulczycki
“Simulated Annealing Algorithm for Radio Frequency Assignment” [in Polish]
■ Studia i materiały Polskiego Stowarzyszenia Zarządzania Wiedza, vol. 31, pp. 98-107, 2010.

- C.19. S. Łukasik, S. Żak
“Firefly Algorithm for Continuous Constrained Optimization Tasks”
■ Lecture Notes in Artificial Intelligence, vol. 5796, pp. 97-106, 2009.
- C.20. P. Kulczycki, S. Łukasik
“Redukcja wymiaru i liczności próby dla potrzeb syntezy statystycznego układu wykrywania uszkodzeń” [in Polish]
■ Systemy wykrywające, analizujące i tolerujące usterki, Z. Kowalczyk (ed.), PWNT, Gdansk (Poland), 2009, pp. 139-146.
- C.21. P.A. Kowalski, S. Łukasik, M. Charytanowicz, P. Kulczycki
“Data-Driven Fuzzy Modeling and Control with Kernel Density Based Clustering Technique”
■ Polish Journal of Environmental Studies, vol. 17, no 4C, pp. 83-87, 2008.
- C.22. S. Łukasik
“Identification of Probabilistic Density in Real-World Systems Using Kernel Density Estimation” [in Polish]
■ Czasopismo Techniczne Politechniki Krakowskiej, seria: Elektrotechnika, vol. 1-E, pp. 3-13, 2008.
- C.23. S. Łukasik, Z. Kokosiński, G. Świętoń
“Parallel Simulated Annealing Algorithm for Graph Coloring Problem”
■ Lecture Notes in Computer Science, vol. 4967, pp. 229-238, 2008.
- C.24. S. Łukasik, P.A. Kowalski, M. Charytanowicz, P. Kulczycki
“Fuzzy Model Identification Using Kernel-Density-Based Clustering”
■ Developments in Fuzzy Sets, Intuitionistic Fuzzy Sets, Generalized Nets and Related Topics. Applications. Volume II, Krassimir Atanassov, Panagiotis Chountas, Janusz Kacprzyk, Maciej Krawczak, Pedro Melo-Pinto, Eulalia Schmidt, Sławomir Zadrozny (eds.), EXIT Publishing House, Warsaw, 2008, pp. 135-146.
- C.25. S. Łukasik
“Parallel Computing of Kernel Density Estimates with MPI”
■ Lecture Notes in Computer Science, vol. 4489, pp. 726-734, 2007.
- C.26. S. Łukasik
“Parallel Genetic Algorithms for Graph Coloring Problem using Message Passing Paradigm”
■ Journal of Electrical Engineering, vol. 56, no 12/s, pp. 123-125, 2005.

D. CONTRIBUTIONS TO SCIENTIFIC CONFERENCES

- D.1. S. Łukasik, P. Kulczycki
“Evaluating Dissimilarity Measures for Topology Preservation Indices Used in Multidimensional Data Analysis”
■ Congress of Information Technology, Computational and Experimental Physics, Kraków (Poland), 18-20 December 2015.
- D.2. S. Łukasik, P.A. Kowalski
“Study of Flower Pollination Algorithm for Continuous Optimization”
■ IEEE Intelligent Systems, Warsaw (Poland), 24-26 September 2014.
- D.3. P.A. Kowalski, S. Łukasik
“Experimental Study of Selected Parameters of the Krill Herd Algorithm”
■ IEEE Intelligent Systems, Warsaw (Poland), 24-26 September 2014.
- D.4. K. Ząbkiewicz, S. Łukasik, P. Kulczycki
“Genetic Programming Based Rule Classifier for Data Streams with Heterogeneous Features”
■ 6th Győr Symposium and 3rd Hungarian-Polish and 1st Hungarian-Romanian Joint Conference on Computational Intelligence, Gyor (Hungary), 15-18 September 2014, pp. 109-117.
- D.5. P.A. Kowalski, S. Łukasik
“Tuning Neural Networks with Krill-Herd Algorithm”
■ 6th Győr Symposium and 3rd Hungarian-Polish and 1st Hungarian-Romanian Joint Conference on Computational Intelligence, Gyor (Hungary), 15-18 September 2014, pp. 119-128.
- D.6. S. Łukasik, P.A. Kowalski
“Fully Informed Swarm Optimization Algorithms: Basic Concepts, Variants and Experimental Evaluation”
■ 2014 Federated Conference on Computer Science and Information Systems, Warsaw (Poland), 7-10 September 2014, pp. 155 – 161.
- D.7. S. Łukasik, P. Kulczycki
“Topology Preservation Measures and their Applications in Multidimensional Data Analysis”
■ International Congress on Control and Information Processing 2013, The Second International Conference on Automatic Control and Information Technology 2013, Kraków (Poland), 7-8 December 2013, CD: Lukasik_Kulczycki_-_ICCIP_2013 (6 pages).

- D.8. S. Łukasik, K. Bury, K. Jakubik
“Parallel Fully-Informed Swarm Algorithms”
■ International Congress on Control and Information Processing 2013, The Second Polish-Hungarian Joint Conference on Computational Intelligence 2013, Kraków (Poland), 7-8 December 2013, CD: Lukasi_k_Bury_et_al_-_ICCIIP_2013 (5 stron).
- D.9. S. Łukasik, 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.
- D.10. P. Kulczycki, M. Charytanowicz, P.A. Kowalski, S. Łukasik
“Exemplary Applications of the Complete Gradient Clustering Algorithm in Bioinformatics, Management and Engineering”
■ First Hungarian-Polish Joint Conference on Computational Intelligence, Gyor (Hungary), pp. 102-106, 24-26 September 2012.
- D.11. P. Kulczycki, S. Łukasik
“Reduction of Dimension and Size of Data Set by Parallel Fast Simulated Annealing”
■ First Hungarian-Polish Joint Conference on Computational Intelligence, Gyor (Hungary), pp. 112-116, 24-26 September 2012.
- D.12. S. Łukasik, P. Kulczycki
“An Algorithm for Sample and Data Dimensionality Reduction Using Fast Simulated Annealing”
■ 7th International Conference on Advanced Data Mining and Applications (ADMA 2011), Beijing (China), 17-19 December 2011.
- D.13. S. Łukasik
“Facts, conjectures and improvements for the Firefly Algorithm”
■ Evolutionary Algorithms and Global Optimization (KAEiOG 2011), Warsaw (Poland), 21-22 September 2011.
- D.14. S. Łukasik, M. Wicha, P. Kulczycki
“Algorytm symulowanego wyżarzania dla problemu przydziału częstotliwości radiowych” [in Polish]
■ Badania Operacyjne i Systemowe (BOS), Bydgoszcz (Poland), 20-22 September 2010.
- D.15. S. Łukasik
“Algorytm świetlika i jego zastosowanie w problemach optymalizacji” [in Polish]
■ Przetwarzanie i analiza sygnałów w systemach wizji i sterowania, Słok (Poland), 23-25 June 2010.

D.16. S. Łukasik, P. Kulczycki

“Data dimensionality and sample size reduction for fuzzy modeling and control”

- Tenth International Conference on Fuzzy Set Theory and Applications (FSTA 2010), Liptovsky Jan (Slovakia), pp. 94-95, 1-5 February 2010.

D.17. S. Łukasik, S. Żak

“Firefly Algorithm for Continuous Constrained Optimization”

- 1st International Conference on Computational Collective Intelligence Semantic Web, Social Networks & Multiagent Systems (ICCCI), Wroclaw (Poland), 5-8 October, 2009.

D.18. P. Kulczycki, S. Łukasik

“Redukcja wymiaru i licznosci proby dla potrzeb syntezy statystycznego ukkladu wykrywania uszkodzen” [in Polish]

- IX Miedzynarodowa Konferencja Diagnostyka Procesow i Systemow (DPS), Gdansk (Poland), 7-9 September, 2009.

D.19. S. Łukasik, P.A. Kowalski, M. Charytanowicz, P. Kulczycki

“Fuzzy Models Synthesis with Kernel-Density Based Clustering Algorithm”

- Fuzzy Systems and Knowledge Discovery (FSKD), Jinan (China), 18-20 October 2008, Proceedings: „Fifth International Conference on Fuzzy Systems and Knowledge Discovery“, Jun Ma, Yilong Yin, Jian Yu, Shuiheng Zhou (eds.), vol. 3, IEEE Computer Society, Los Alamitos (USA), 2008, pp. 449-453.

D.20. S. Łukasik, Z. Kokosiński, G. Świętoń

“Parallel Simulated Annealing Algorithm for Graph Coloring Problem”

- International Conference on Parallel Processing and Applied Mathematics (PPAM), Gdansk (Poland), 9-12 September 2007.

D.21. S. Żak, S. Łukasik

“The Application of Parallel Genetic Algorithms in Resource Allocation Problems” [in Polish]

- Krakow Young Scientists Conference, 21-23 września 2006, In Proceedings: „Materiały konferencyjne Krakowskiej Konferencji Młodych Uczonych”, Academica Publishing House, Krakow, 2006, pp. 171-179.

D.22. S. Łukasik

“Parallel Genetic Algorithms for Graph Coloring Problem using Message Passing Paradigm”

- International Conference in Applied Mathematics (ISCAM 2005), Bratislava (Slovakia), pp. 20, 15-16 April 2005.

D.23. S. Łukasik

“Jordan Canonical Form and some of its applications in modern control engineering”

- International Conference in Applied Mathematics (ISCAM 2004), Bratislava (Slovakia), pp. 22, 16-17 April 2004.

E. CITATIONS

- **478** citations (according to Google Scholar).

F. AWARDS

- Winner of business plan competition organized in the framework of "B-Innovative - Entrepreneurship for Better Business in Europe" project, 2013.
- Member of the Polish Government "Top 500 Innovators Science, Management, Commercialization Program" (EU co-funded), 2013.
- Postdoctoral scholarship in the framework of "Information technologies: research and their interdisciplinary applications " project (EU co-funded), 2013.
- Cracow University of Technology Rector Individual Prize for outstanding scientific achievements, 2012.

G. MEMBERSHIP IN ORGANIZATIONS

- Top 500 Innovators association (member of the program board),
- IEEE and IEEE Computational Intelligence Society.

H. SKILLS AND INTERESTS

- C/C++ and MATLAB programming, with special emphasis on parallel and distributed code (OpenMP, MPI, CUDA etc.),
- Exploratory data analysis (using SPSS, Statistica, MATLAB),
- Collective intelligence and nature-inspired heuristic algorithms,
- Computer networking and administration (mainly UNIX-based servers), CISCO Networking Academy Instructor.

I. TEACHING DUTIES

- Former teaching duties: "Exploratory Data Analysis" and "Computer Networks", "Parallel and Distributed Computing", "Control Engineering", "Information Technology", "Computer Control Systems", "Probability in Technical Applications" at Cracow University of Technology (both for Polish and international students, lectures and laboratory exercises)

- Current teaching duties: “Exploratory Data Analysis”, “Matlab Numerical Computing Environment and its Applications”, “Engineering Statistics”, “Fundamentals of Control Engineering” at AGH University of Science and Technology (lectures and laboratory exercises)
- Supervision of seven already defended MSc and BSc thesis in Computer Science and Control Engineering