

# FH-Prof. DI Dr. Stephan M. Winkler:

## Lists of Publications and Patents

### 2017-06

#### Publications in Peer-Reviewed Journals:

- Daniela Borgmann, Susanne Schaller, Lisa Obritzberger, Elisabeth Daniel, Viktoria Dorfer, Sebastian Schubert, Sandra Mayr, Jaroslav Jacak, and Stephan M. Winkler: **NanoDetect: A Bioinformatics Image Processing Framework for Automated Analysis of Cellular Macro and Nano Structures**. To be submitted to *BMC Biomedical Imaging*, 2017.
- Sebastian Dorl, Stephan M. Winkler, Karl Mechtler, and Viktoria Dorfer: **PhoStar: Identifying tandem mass spectra of phosphorylated peptides before database search**. To be submitted to *Journal of Proteome Research*, 2017.
- Sebastian Dorl, Stephan M. Winkler, Karl Mechtler, and Viktoria Dorfer: **MS Ana, a Universal Spectral Library Search Engine for High Accuracy Tandem Mass Spectra**. To be submitted to *Journal of Proteome Research*, 2017.
- Viktoria Dorfer, Sergey Maltsev, Stephan M. Winkler, and Karl Mechtler: **CharmeRT: Boosting peptide identifications by chimeric spectra identification and retention time prediction**. To be submitted to *Nature Methods*, 2017.
- Stephan M. Winkler, Michael Affenzeller, Bogdan Burlacu, Gabriel Kronberger, Michael Kommenda, and Stefan Wagner: **Population Dynamics in Genetic Programming and the Influence of Parent and Offspring Selection Mechanisms**. To be submitted to *Genetic Programming and Evolvable Machines*, 2017.
- Gabriel Kronberger, Michael Kommenda, Edwin Lughofer, Susanne Saminger-Platz, Andreas Promberger, Falk Nickel, Stephan M. Winkler, and Michael Affenzeller: **Robust Generalized Fuzzy Modeling and Enhanced Symbolic Regression for Modeling Tribological Systems**. Submitted to *Applied Soft Computing*, Elsevier, 2017.
- J. Ignacio Hidalgo, J. Manuel Colmenar, Gabriel Kronberger, Stephan M. Winkler, Oscar Garnica, and Juan Lanchares: **Data Based Prediction of Blood Glucose Concentrations Using Evolutionary Methods**. Submitted to *Journal of Medical Systems*, 2017.
- J. Rafael Sendra and Stephan M. Winkler: **A Heuristic and Evolutionary Algorithm to Optimize the Coefficients of Curve Parametrizations**. *Journal of Computational and Applied Mathematics*, 305, p. 18-35, Elsevier 2016.
- Daniela Borgmann, Sandra Mayr, Helene Polin, Susanne Schaller, Viktoria Dorfer, Christian Gabriel, Stephan M. Winkler, and Jaroslav Jacak: **Single Molecule Fluorescence Microscopy and Machine Learning for Rhesus D Antigen Classification**. *Scientific Reports* 6, article no. 32317, <https://www.nature.com/articles/srep32317>, 2016.
- Verena Stadlbauer, Renate Haselgrübler, Peter Lanzerstorfer, Birgit Plochberger, Daniela M. Borgmann, Jaroslav Jacak, Stephan M. Winkler, Klaus Schröder, Otmar Höglinger, and Julian Weghuber: **Biomolecular Characterization of Putative Antidiabetic Herbal Extracts**. *PLOS ONE* 11(1), 2016.
- Stephan M. Winkler, Susanne Schaller, Gabriel Kronberger, Michael Affenzeller, Bonifacio Castaño, and Sergio Luengo: **Heterogenous model ensembles for short term prediction of stock market trends**. *International Journal of Simulation and Process Modelling*, Vol. 11, No. 6, pp. 504-513, Inderscience, 2016.
- Stephan M. Winkler, Susanne Schaller, Michael Affenzeller, and Gerald Petz: **Data Based Prediction of Sentiments Using Heterogeneous Model Ensembles**. *Soft Computing, Special Issue on Hybrid and Ensemble Techniques in Soft Computing: Recent Advances and Emerging Trends*, 19:3401-3412, Springer, 2015.
- Johannes Weinberger, Raul Jimenez-Heredia, Susanne Schaller, Susanne Suessner, Judith Sunzenauer, Roman Reindl-Schwaighofer, Richard Weiss, Stephan Winkler, Christian Gabriel, Martin Danzer, and Rainer Oberbauer: **Immune Repertoire Profiling Reveals that Clonally Expanded B and T Cells Infiltrating Diseased Human Kidneys Can also Be Tracked in the Blood**. *PLOS ONE* 10(11), 2015.
- Jaroslav Jacak, Susanne Schaller, Daniela M. Borgmann, and Stephan M. Winkler: **Characterization of the Distance Relationship between Localized Serotonin Receptors and Glia Cells on Fluorescence Microscopy Images of Brain Tissue**. *Microscopy and Microanalysis*, Vol. 21, No. 4, Cambridge University Press, 2015.

- Susanne Schaller, Johannes Weinberger, Raúl Jiménez Heredia, Martin Danzer, Rainer Oberbauer, Christian Gabriel, and Stephan M. Winkler: **ImmunExplorer (IMEX): A Software Framework for Diversity and Clonality Analyses of Immunoglobulins and T Cell Receptors on the Basis of IMGT/HighV-QUEST Preprocessed NGS Data.** *BMC Bioinformatics*, Vol. 16, No. 252, 2015.
- J. Rafael Sendra and Stephan M. Winkler: **Optimization of Coefficients of Lists of Polynomials by Evolutionary Algorithms.** *Annales Mathematicae et Informaticae*, 2015.
- Gerd Bramerdorfer, Stephan M. Winkler, Michael Kommenda, Guenther Weidenholzer, Siegfried Silber, Gabriel Kronberger, Michael Affenzeller, and Wolfgang Amrhein: **Using FE Calculations and Data-Based System Identification Techniques to Model the Nonlinear Behavior of PMSMs.** *IEEE Transactions of Industrial Electronics*, 61(11):6454-6462, 2014.
- Viktoria Dorfer, Peter Pichler, Thomas Stranzl, Johannes Stadlmann, Thomas Taus, Stephan M. Winkler, and Karl Mechtler: **MS Amanda, a Universal Identification Algorithm Optimized for High Accuracy Tandem Mass Spectra.** *Journal of Proteome Research*, Vol. 13(8):3679-84, 2014.
- Peter Lanzerstorfer, Stephan M. Winkler, Otmar Höglinger, and Julian Weghuber: **Quantification and Kinetic Analysis of Grb2-EGFR Interaction on Micropatterned Surfaces for the Characterization of EGFR-modulating Substances.** *PLOS-ONE*, Vol. 3, No. 9, 2014.
- Peter Lanzerstorfer, Verena Stadlbauer, Lilia Chtcheglova, Renate Haselgrübler, Daniela Borgmann, Jürgen Wruss, Peter Hinterdorfer, Klaus Rudolf Schröder, Stephan M. Winkler, Otmar Höglinger, and Julian Weghuber: **Identification of Novel Insulin Mimetic Drugs by Quantitative Total Internal Reflection Fluorescence (TIRF) Microscopy.** *British Journal of Pharmacology*, 171(23):5237-5251, Wiley, 2014.
- Peter Lanzerstorfer, Jürgen Wruss, Stefan Huemer, Andrea Steininger, Ulrike Müller, Markus Himmelsbach, Daniela Borgmann, Stephan M. Winkler, Otmar Höglinger, and Julian Weghuber: **Bioanalytical Characterization of Apple Juice from 88 Grafted and Nongrafted Apple Varieties Grown in Upper Austria.** *Journal of Agricultural and Food Chemistry*, 62(5):1047-1056, ACS Publications, 2014.
- Stephan M. Winkler, Michael Affenzeller, Gabriel Kronberger, Michael Kommenda, Stefan Wagner, Viktoria Dorfer, and Witold Jacak: **On the use of estimated tumour marker classifications in tumour diagnosis prediction - a case study for breast cancer.** *Int. J. Simulation and Process Modelling*, 8(1):29-41. Inderscience Publishers, 2013.
- Stephan M. Winkler, Gabriel K. Kronberger, Michael Affenzeller, and Herbert Stekel: **Variable interaction networks in medical data.** *International Journal of Privacy and Health Information Management*, 1(2):1-16, 2013.
- Christoph Büschl, Bernhard Kluger, Franz Berthiller, Gerald Lirk, Stephan M. Winkler, Rudolf Krska, and Rainer Schuhmacher: **MetExtract: A new software tool for the automated comprehensive extraction of metabolite-derived LC/MS signals in metabolomics research.** *Bioinformatics*, Oxford Journals, 28(5): 736-738, 2012.
- Stephan M. Winkler: **Structural Versus Evaluation Based Solutions Similarity in Genetic Programming Based System Identification.** *Nature Inspired Cooperative Strategies for Optimization*, pp. 269-282. *Studies in Computational Intelligence*, No. 284, Springer, 2010.
- Michael Affenzeller, Stephan M. Winkler, and Stefan Wagner: **Effective Allele Preservation by Offspring Selection: An Empirical Study for the TSP.** *International Journal of Simulation and Process Modelling*, Vol. 6, No. 1, pp. 29-39. Inderscience Publishers, 2010.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Using Enhanced Genetic Programming Techniques for Evolving Classifiers in the Context of Medical Diagnosis.** *Genetic Programming and Evolvable Machines*, Vol. 10, No. 2, pp. 111-140. Springer, 2009.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Variables Diversity in Systems Identification Based on Extended Genetic Programming.** *Journal of Systems Science*, Vol. 34, No. 2, pp. 27-34. Oficyna Wydawnicza Politechniki Wrocławskiej, 2008, PL ISSN 0137-1223.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Advanced Genetic Programming Based Machine Learning.** *Journal of Mathematical Modelling and Algorithms*, ISSN 1570-1166 (print), 1572-9214 (online), DOI 10.1007/s10852-007-9065-6. Springer Netherlands, 2007.
- Stephan M. Winkler, Hajrudin Efendic, Michael Affenzeller, Luigi del Re, and Stefan Wagner: **On-Line Modeling Based on Genetic Programming.** *International Journal on Intelligent Systems Technologies and Applications*, Vol. 2, NOs. 2/3, pp. 255-270. Inderscience Publishers, 2007.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **New Methods for the Identification of Nonlinear Model Structures Based Upon Genetic Programming Techniques.** *Journal of Systems Science*, Vol. 31, No. 1, pp. 5-13. Oficyna Wydawnicza Politechniki Wrocławskiej, 2005.
- Michael Affenzeller, Stefan Wagner, and Stephan M. Winkler: **GA Selection Revisited from an ES-Driven Point of View.** *Artificial Intelligence and Knowledge Engineering Applications: A Bioinspired Approach*, Lecture Notes in Computer Science 3562, pp. 262-271. Springer, 2005.

- Luigi del Re, Peter Langthaler, Christian Furtmüller, Stephan M. Winkler, and Michael Affenzeller: **NOx Virtual Sensor Based on Structure Identification and Global Optimization**. *SAE Transaction Journal of Engines*, 2005-01-0050. SAE International, 2005.

## Books and Book Chapters:

- Bogdan Burlacu, Michael Affenzeller, Michael Kommenda, Gabriel Kronberger, and Stephan M. Winkler: **Similarity-based Analysis of Population Dynamics in Genetic Programming Performing Symbolic Regression**. To be published in *Genetic Programming Theory and Practice XV*, Springer, 2018.
- Stephan M. Winkler, Michael Affenzeller, Gabriel Kronberger, Michael Kommenda, Bogdan Burlacu, and Stefan Wagner: **Similarity-based Analysis of Population Dynamics in Genetic Programming Performing Symbolic Regression**. Accepted to be published in *Genetic Programming Theory and Practice XIV*, Springer, 2017.
- Michael Kommenda, Gabriel Kronberger, Michael Affenzeller, Stephan M. Winkler, and Bogdan Burlacu: **Evolving Simple Symbolic Regression Models by Multi-Objective Genetic Programming**. In *Genetic Programming Theory and Practice XIII*, pp.1-19, Springer, 2016.
- Stephan M. Winkler, Michael Affenzeller, Gabriel Kronberger, Michael Kommenda, Bogdan Burlacu, and Stefan Wagner: **Sliding Window Symbolic Regression for Detecting Changes of System Dynamics**. In *Genetic Programming Theory and Practice XII*, Springer, pp. 91-107, 2015.
- Bogdan Burlacu, Michael Affenzeller, Stephan M. Winkler, Michael Kommenda, and Gabriel Kronberger: **Methods for Genealogy and Building Block Analysis in Genetic Programming**. In *Studies in Computational Intelligence*, Vol. 595, pp. Chapter 5, 61-74, Springer, 2015.
- Michael Kommenda, Michael Affenzeller, Gabriel Kronberger, Bogdan Burlacu and Stephan M. Winkler: **Multi-Population Genetic Programming with Data Migration for Symbolic Regression**. In *Studies in Computational Intelligence*, Vol. 595, Chapter 6, pp. 75-87, Springer, 2015.
- Stephan M. Winkler, Susanne Schaller, Daniela Borgmann, Lisa Obritzberger, Viktoria Dorfer, Christian Haider, Sandra Mayr, Peter Lanzerstorfer, Claudia Loimayr, Simone Hennerbichler-Lugscheider, Andrea Lindenmair, Heinz Redl, Michael Affenzeller, Julian Weghuber, and Jaroslaw Jacak: **Identification and Classification of Objects and Motions in Microscopy Images of Biological Samples Using Heuristic Algorithms**. In *Studies in Computational Intelligence*, Vol. 595, Chapter 8, pp. 103-117, Springer, 2015.
- Michael Affenzeller, Stephan M. Winkler, Gabriel Kronberger, Michael Kommenda, Bogdan Burlacu, and Stefan Wagner: **Gaining Deeper Insights in Symbolic Regression**. *Genetic Programming Theory and Practice XI*, Springer, 2014.
- Stephan M. Winkler, Michael Affenzeller, Gabriel K. Kronberger, Michael Kommenda, Stefan Wagner, Witold Jacak, and Herbert Stekel: **On the Identification of Virtual Tumor Markers and Tumor Diagnosis Predictors Using Evolutionary Algorithms**. *Advanced Methods and Applications in Computational Intelligence*, Topics in Intelligent Engineering and Informatics, Vol. 6, pp. 95-122. Springer, 2014.
- Stefan Wagner, Gabriel Kronberger, Andreas Beham, Michael Kommenda, Andreas Scheibenpflug, Erik Pitzer, Stefan Vonolfen, Monika Kofler, Stephan M. Winkler, Viktoria Dorfer, and Michael Affenzeller: **Architecture and Design of the HeuristicLab Optimization Environment**. *Advanced Methods and Applications in Computational Intelligence*, Topics in Intelligent Engineering and Informatics, Vol. 6, pp. 197-261. Springer, 2014.
- Witold Jacak and Karin Pröll and Stephan M. Winkler: **Neural Networks Based Feature Selection in Biological Data Analysis**. *Advanced Methods and Applications in Computational Intelligence*, Topics in Intelligent Engineering and Informatics, Vol. 6, pp. 79-94. Springer, 2014.
- Peter Lanzerstorfer, Andrea Steininger, Otmar Höglinger, Julian Weghuber, Daniela Borgmann, Susanne Schaller, Stephan M. Winkler, Mario Brameshuber, Stefan Sunzenauer, and Gerhard Schütz: **Analysis of Protein-Protein Interactions in Live Cells - The  $\mu$ -Patterning Approach**. In *Basic Methods in Protein Purification and Analysis*, iConcept Press, 2012.
- Michael Affenzeller, Andreas Beham, Monika Kofler, Gabriel Kronberger, Stefan Wagner, and Stephan M. Winkler: **Metaheuristic Optimization**. In Buchberger et al. (eds.): *Hagenberg Research*. Springer, Berlin; ISBN: 978-3642021268. 2009.
- Michael Affenzeller, Stephan M. Winkler, Stefan Wagner, and Andreas Beham: **Genetic Algorithms and Genetic Programming - Modern Concepts and Practical Applications**. *Chapman & Hall / CRC Press*. ISBN 978-1584886297. 2009.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **On the Reliability of Nonlinear Modeling Using Enhanced Genetic Programming Techniques**. In C. Skiadas, I. Dimotikalis, and C. Skiadas (eds.): *Topics on Chaotic Systems*, pp. 398 - 405. World Scientific Publishing, 2009.

- Michael Affenzeller, Stephan M. Winkler, and Stefan Wagner: **Evolutionary Systems Identification: New Algorithmic Concepts and Applications**. In *Advances in Evolutionary Algorithms*, pp. 29-48. IN-TECH Education and Publishing, 2008, ISBN 978-953-7619-11-4.

## Theses:

- Stephan M. Winkler: *Evolutionary System Identification - Modern Concepts and Practical Applications*. PhD Thesis. Institute for Formal Models and Verification, Johannes Kepler University Linz, Austria. 2008.
- Stephan M. Winkler: *Identifying Nonlinear Model Structures By Genetic Programming*. Diploma Thesis. Institute of Systems Theory and Simulation, Johannes Kepler University Linz, Austria, 2004.

## Peer-Reviewed Conference Papers:

- Stephan M. Winkler and J. Rafael Sendra: **Fitness Landscape Analysis in the Optimization of Coefficients of Curve Parametrizations**. Accepted to be published in *Computer Aided Systems Theory - EUROCAST 2017*, Springer Lecture Notes in Computer Science, 2017.
- Gabriel Kronberger, Bogdan Burlacu, Michael Kommenda, Stephan M. Winkler, and Michael Affenzeller: **Measures for the Evaluation and Comparison of Graphical Model Structures**. Accepted to be published in *Computer Aided Systems Theory - EUROCAST 2017*, Springer Lecture Notes in Computer Science, 2017.
- Bogdan Burlacu, Michael Affenzeller, Michael Kommenda, Gabriel Kronberger, and Stephan M. Winkler: **Analysis of Schema Frequencies in Genetic Programming**. Accepted to be published in *Computer Aided Systems Theory - EUROCAST 2017*, Springer Lecture Notes in Computer Science, 2017.
- Michael Affenzeller, Bogdan Burlacu, Stephan M. Winkler, Michael Kommenda, Gabriel Kronberger, Stefan Wagner, and Stephan M. Winkler: **Offspring Selection Genetic Algorithm Revisited: Improvements in Efficiency by Early Stopping Criteria in the Evaluation of Unsuccessful Individuals**. Accepted to be published in *Computer Aided Systems Theory - EUROCAST 2017*, Springer Lecture Notes in Computer Science, 2017.
- J. Manuel Colmenar, Stephan M. Winkler, Gabriel Kronberger, Esther Maqueda, Marta Botella, Almudena Sánchez, Sergio Contador, Jose Manuel Velasco, Oscar Garnica, Juan Lanchares, and Ignacio Hidalgo: **Predicción del nivel de glucosa en sangre para pacientes con diabetes utilizando técnicas evolutivas**. *Proceedings of the XI Congreso Español de Metaheurísticas, Algoritmos Evolutivos y Bioinspirados (MAEB 2016)*, Salamanca, September 2016.
- J. Manuel Colmenar, Stephan M. Winkler, Gabriel Kronberger, Esther Maqueda, Marta Botella, J. Ignacio Hidalgo: **Predicting Glycemia in Diabetic Patients By Evolutionary Computation and Continuous Glucose Monitoring**. *Proceeding of the Genetic and Evolutionary Computation Conference GECCO 2016, conference companion*, pp. 1393-1400, ACM, 2016.
- Viktoria Dorfer, Sergey Maltsev, Stephan Dreiseitl, Karl Mechtler, and Stephan M. Winkler: **A Symbolic Regression Based Scoring System Improving Peptide Identifications for MS Amanda**. *Proceedings of the Genetic and Evolutionary Computation Conference GECCO 2015*, pp. 1335-1341, ACM, 2015.
- J. Manuel Velasco, Stephan M. Winkler, J. Ignacio Hidalgo, Oscar Garnica, Juan Lanchares, J. Manuel Colmenar, Esther Maqueda, Marta Botella, and Jose-Antonio Rubio: **Data-Based Identification of Prediction Models for Glucose**. *Proceedings of the Genetic and Evolutionary Computation Conference GECCO 2015, conference companion*, pp. 1327-1334, ACM, 2015.
- Lisa Obritzberger, Daniela Borgmann, Susanne Schaller, Viktoria Dorfer, Andrea Lindenmair, Susanne Wolbank, Heinz Redl, and Stephan M. Winkler: **Prediction of Mineralization Degree in Human Amniotic Membrane Using Image Processing Techniques and Machine Learning**. *Proceedings of 11th Metaheuristics International Conference MIC 2015*, Agadir, Morocco, 2015.
- Sergio Luengo, Stephan M. Winkler, David F. Barrero, and Bonifacio Castano: **Optimization of Trading Rules for the Spanish Stock Market by Genetic Programming**. *Proceedings of The 28th International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems IEA/AIE 2015*.
- Michael Affenzeller, Karin Zölzer, Stephan M. Winkler, Erwin Hopf, Herbert Stekel, Rupert Frechinger, and Stefan Wagner: **Increasing the Sensitivity of Cancer Predictors Using Confidence Based Ensemble Modeling**. *Computer Aided Systems Theory - EUROCAST 2015*, Springer Lecture Notes in Computer Science, Vol. 9520, pp. 350-358, 2015.

- Andreas Beham, Judith Fechter, Michael Kommenda, Stefan Wagner, Stephan M. Winkler, and Michael Affenzeller: **Optimization Strategies for Integrated Knapsack and Traveling Salesman Problems.** *Computer Aided Systems Theory - EUROCAST 2015*, Springer Lecture Notes in Computer Science, Vol. 9520, pp. 359-366, 2015.
- Daniela Borgmann, Sandra Mayr, Helene Polin, Lisa Obritzberger, Susanne Schaller, Viktoria Dorfer, Jaroslaw Jacak, and Stephan M. Winkler: **Classifying Human Blood Samples Using Characteristics of Single Molecules and Cell Structures on Microscopy Images.** *Computer Aided Systems Theory - EUROCAST 2015*, Springer Lecture Notes in Computer Science, Vol. 9520, pp. 310-317, 2015.
- Gabriel Kronberger, Michael Kommenda, Stephan M. Winkler, and Michael Affenzeller: **Using Contextual Information in Sequential Search for Grammatical Optimization Problems.** *Computer Aided Systems Theory - EUROCAST 2015*, Springer Lecture Notes in Computer Science, Vol. 9520, pp. 417-424, 2015.
- Lisa Obritzberger, Susanne Schaller, Viktoria Dorfer, Andrea Lindenmair, Susanne Wolbank, Heinz Redl, and Stephan M. Winkler: **Prediction of Stem Cell Differentiation in Human Amniotic Membrane Images Using Machine Learning.** *Computer Aided Systems Theory - EUROCAST 2015*, Springer Lecture Notes in Computer Science, Vol. 9520, pp. 318-325, 2015.
- Susanne Schaller, Johannes Weinberger, Martin Danzer, and Stephan M. Winkler: **Classification of the States of Human Adaptive Immune Systems by Analyzing Immunoglobulin and T Cell Receptors Using ImmunExplorer.** *Computer Aided Systems Theory - EUROCAST 2015*, Springer Lecture Notes in Computer Science, Vol. 9520, pp. 302-309, 2015.
- Stephan M. Winkler, Gabriel Kronberger, Stefan Fink, and Michael Affenzeller: **Dynamics of Predictability and Variable Influences Identified in Financial Data Using Sliding Window Machine Learning.** *Computer Aided Systems Theory - EUROCAST 2015*, Springer Lecture Notes in Computer Science, Vol. 9520, pp. 326-333, 2015.
- Gerd Bramerdorfer, Stephan M. Winkler, Michael Affenzeller, and Wolfgang Amrhein: **Identification of a Nonlinear PMSM Model Using Symbolic Regression and its Application to Current Optimization Scenarios.** *Proceedings of 40th Annual Conference of IEEE Industrial Electronics Society IECON 2014*, Dallas, TX, USA, October 28 - November 1, 2014.
- Stephan M. Winkler, Bonifacio Castano, Sergio Luengo, Susanne Schaller, Gabriel Kronberger, and Michael Affenzeller: **Data-Based Identification of Short Term Predictors for Stock Market Trends Using Heterogeneous Model Ensembles.** *Proceedings of the 26th European Modeling and Simulation Symposium (EMSS2014)*, Bordeaux, France, September 2014.
- Susanne Schaller, Johannes Weinberger, Martin Danzer, Christian Gabriel, Rainer Oberbauer, and Stephan M. Winkler: **Mathematical Modeling of the Diversity in Human B and T Cell Receptors Using Machine Learning.** *Proceedings of the 26th European Modeling and Simulation Symposium (EMSS2014)*, Bordeaux, France, September 2014.
- Lisa Obritzberger, Susanne Schaller, Viktoria Dorfer, Claudia Loimayr, Simone Hennerbichler, and Stephan M. Winkler: **Identification of Endothelial Cell Morphology in Cornea Using Evolution Strategies.** *Proceedings of the 26th European Modeling and Simulation Symposium (EMSS2014)*, Bordeaux, France, September 2014.
- Stephan M. Winkler, Michael Affenzeller, Susanne Schaller, and Herbert Stekel: **Data Based Prediction of Cancer Diagnoses Using Heterogeneous Model Ensembles - A Case Study for Breast Cancer, Melanoma, and Cancer in the Respiratory System.** *Proceeding of the Genetic and Evolutionary Computation Conference GECCO 2014*, ACM, 2014.
- Michael Kommenda, Michael Affenzeller, Bogdan Burlacu, Gabriel Kronberger, and Stephan M. Winkler: **Genetic Programming with Data Migration for Symbolic Regression.** *Proceeding of the Genetic and Evolutionary Computation Conference GECCO 2014*, ACM, 2014.
- J. Rafael Sendra and Stephan M. Winkler: **Optimization of Coefficients of Lists of Polynomials by Evolutionary Algorithms.** *Proceedings of The 9th International Conference on Applied Informatics*, Eger, Hungary, January 2014.
- Susanne Schaller, Jaroslaw Jacak, Daniel Gschwandtner, Peter Bettelheim, and Stephan M. Winkler: **Identification of PNH Affected Cells by Classifying Motion Characteristics of Single Molecules.** *Proceedings of the International Workshop on Innovative Simulation for Health Care (IWISH)*, Athens, Greece, September 2013, pp. 52-57.
- Stephan M. Winkler, Michael Affenzeller, and Herbert Stekel: **Evolutionary Identification of Cancer Predictors Using Clustered Data - A Case Study for Breast Cancer, Melanoma, and Cancer in the Respiratory System.** *Proceedings of the Genetic and Evolutionary Computation Conference (GECCO 2013)*, pp. 1463-1470. ACM, 2013.

- Michael Kommenda, Gabriel Kronberger, Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Effects of Constant Optimization by Nonlinear Least Squares Minimization in Symbolic Regression**. *Proceeding of the Genetic and Evolutionary Computation Conference (GECCO 2013)*, pp. 1121-1128. ACM, 2013.
- Bogdan Burlacu, Michael Affenzeller, Michael Kommenda, Stephan M. Winkler, and Gabriel Kronberger: **Visualization of Genetic Lineages and Inheritance Information in Genetic Programming**. *Proceeding of the Genetic and Evolutionary Computation Conference (GECCO 2013), conference companion*, ISBN: 978-1-4503-1964-5, pp. 1351-1358. ACM, 2013.
- Peter Lanzerstorfer, Andrea Steininger, Verena Stadlbauer, Daniela M. Borgmann, Stephan M. Winkler, Otmar Höglinger, and Julian Weghuber: **Biophysical and biochemical characterization of insulin-dependent cellular systems in response to secondary plant metabolites**. *Tagungsband des 7. Forschungsforums der Österreichischen Fachhochschulen (Proceedings of the 7th Science Symposium of Austrian Universities for Applied Sciences)*, 2013.
- Stephan M. Winkler, Michael Affenzeller, and Herbert Stekel: **An Integrated Clustering and Classification Approach for the Analysis of Tumor Patient Data**. *Computer Aided Systems Theory - EUROCAST 2013*, Springer Lecture Notes in Computer Science, 8111, pp. 388-395, 2013.
- Michael Kommenda, Michael Affenzeller, Gabriel Kronberger, and Stephan M. Winkler: **Nonlinear Least Squares Optimization of Constants in Symbolic Regression**. *Computer Aided Systems Theory - EUROCAST 2013*, Springer Lecture Notes in Computer Science, 8111, pp. 420-427, 2013.
- Susanne Schaller, Michael Sams, Jaroslaw Jacak, and Stephan M. Winkler: **Statistical Analysis of the Relationship between Spots and Structures in Microscopy Images**. *Computer Aided Systems Theory - EUROCAST 2013*, Springer Lecture Notes in Computer Science, 8111, pp. 211-218, 2013.
- Gerald Petz, Andreas Auinger, Harald Fürschuß, Michal Karpowicz, Stephan M. Winkler, Viktoria Dorfer, and Susanne Schaller: **Text preprocessing for opinion mining**. *Proceedings of The 2012 International Conference on Active Media Technology*, 4-7 December 2012, Macau. Springer LNCS/LNAI, 2012.
- Michael Affenzeller, Stephan M. Winkler, Stefan Forstenlechner, Gabriel Kronberger, Michael Kommenda, Stefan Wagner, Herbert Stekel: **Enhanced Confidence Interpretations of GP-Based Ensemble Modeling Results**. *Proceedings of the 24th European Modeling and Simulation Symposium (EMSS2012)*, pp. 340-345. Vienna, Austria, September 2012.
- Daniela M. Borgmann, Julian Weghuber, Susanne Schaller, Jaroslaw Jacak, and Stephan M. Winkler: **Identification of Patterns in Microscopy Images of Biological Samples Using Evolution Strategies**. *Proceedings of the 24th European Modeling and Simulation Symposium (EMSS2012)*, pp. 271-276. Vienna, Austria, September 2012.
- Bogdan Burlacu, Michael Affenzeller, Michael Kommenda, Stephan M. Winkler, and Gabriel Kronberger: **Evolution Tracking in Genetic Programming**. *Proceedings of the 24th European Modeling and Simulation Symposium (EMSS2012)*, pp. 362-367. Vienna, Austria, September 2012.
- Stephan M. Winkler, Michael Affenzeller, Gabriel Kronberger, Michael Kommenda, Stefan Wagner, Witold Jacak, and Herbert Stekel: **Variable Interaction Networks in Medical Data**. *Proceedings of the 24th European Modeling and Simulation Symposium (EMSS2012)*, pp. 265-270. Vienna, Austria, September 2012.
- Michael Kommenda, Gabriel Kronberger, Stefan Wagner, Stephan M. Winkler, and Michael Affenzeller: **On the Architecture and Implementation of Tree-Based Genetic Programming in Heuristic-Lab**. *Proceedings of the 14th Annual Genetic and Evolutionary Computation Conference - GECCO 2012, Companion Material Proceedings*, Philadelphia, PA, USA, July 7-11, 2012, pp. 101-108. ACM, 2012, ISBN 978-1-4503-1178-6.
- Viktoria Dorfer, Peter Pichler, Stephan M. Winkler, and Karl Mechtler: **A new scoring function for HCD spectra**. *Proceedings of the 11th European Conference on Computational Biology (ECCB), Workshop on Computational Proteomics*, Basel, 2012.
- Harald Fürschuß, Gerald Petz, Patrizia Faschang, Susanne Schaller, Stephan M. Winkler, and Viktoria Dorfer: **Qualitative Bedarfserhebung an Opinion Mining Tools im Web 2.0**. *Tagungsband des 6. Forschungsforums der Österreichischen Fachhochschulen (Proceedings of the 6th Science Symposium of Austrian Universities for Applied Sciences)*, Vol. 1, pp. 33-36. FH JOANNEUM, 2012. ISBN: 3-902103-37-X.
- Susanne Schaller, Stephan M. Winkler, Julian Weghuber, Michael Sams, Jaroslaw Jacak:  **$\mu$ Detect: Design of a Framework for Optimized Structure Analysis in Fluorescence Microscopy Images**. *Tagungsband des 6. Forschungsforums der Österreichischen Fachhochschulen (Proceedings of the 6th Science Symposium of Austrian Universities for Applied Sciences)*, Vol. 1, pp. 125-130. FH JOANNEUM, 2012. ISBN: 3-902103-37-X.
- Viktoria Dorfer, Stephan M. Winkler, Thomas Kern, Gerald Petz, and Patrizia Faschang: **Analysis of Single-Objective and Multi-Objective Evolutionary Algorithms in Keyword Cluster Optimization**. *EUROCAST'11 Proceedings of the 13th International Conference on Computer Aided Systems Theory*, Vol. I, pp. 408-415, Springer-Verlag Berlin Heidelberg, 2012.

- Michael Kommenda, Gabriel Kronberger, Christoph Feilmayr, Leonhard Schickmair, Michael Affenzeller, Stephan M. Winkler, and Stefan Wagner: **Application of Symbolic Regression on Blast Furnace and Temper Mill Datasets**. *EUROCAST'11 Proceedings of the 13th International Conference on Computer Aided Systems Theory*, Vol. I, pp. 400-407, Springer-Verlag Berlin Heidelberg, 2012.
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