

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

Lists of Publications and Patents

2020-04

Publications in Peer-Reviewed Journals:

- Aurelia Tschida, Verena Stadlbauer, Bettina Schwarzinger, Martin Maier, Johannes Pitsch, Flora Stübl, Ulrike Müller, Peter Lanzerstorfer, Markus Himmelsbach, Jürgen Wruss, Gerald Klanert, Jonas Schurr, Lothar Wurm, Franz Rosner, Otmar Höglinger, Stephan M. Winkler, and Julian Weghuber: **Nutrients, bioactive compounds, and minerals in the juices of 16 varieties of apple (*Malus domestica*) harvested in Austria: A four-year study investigating putative correlations with weather conditions during ripening.** Submitted to *Food Chemistry*, 2020.
- Bianca Buchegger, Andreas Haghofer, Dominik Höglinger, Jaroslav Jacak, Stephan M. Winkler, and Armin Hochreiner: **Beam Shaping of Femtosecond Laser Pulses by a LC-SLM for Lithography Applications Utilizing a Raspberry Pi Camera in Bayer Mode for Machine Learning.** Submitted to *Optics Express*, 2020.
- Evgeniia Korotchenko, Victoria Schießl, Sandra Scheibhofer, Isabella Joubert, Helen Strandt, Theresa Neuper, Muamera Sarajlic, Renate Bauer, Mark Geppert, David Joedicke, Sabrina Wildner, Susanne Schaller, Stephan M. Winkler, Gabriele Gadermaier, Jutta Horejs-Hoeck, and Richard Weiss: **Laser-facilitated epicutaneous immunotherapy with hypoallergenic beta-glucan neoglycoconjugates suppresses lung inflammation and avoids local side effects in a mouse model of allergic asthma.** *Allergy: European Journal of Allergy and Clinical Immunology*, 2020.
- Andreas Haghofer, Sebastian Dorl, Andre Oszwald, Johannes Breuss, Jaroslav Jacak, and Stephan M. Winkler: **Evolutionary Optimization of Image Processing for Cell Detection in Microscopy Images.** *Soft Computing*, Springer, June 2020. <https://doi.org/10.1007/s00500-020-05033-0>
- Gabriel Kronberger, J. Manuel Colmenar, Stephan M. Winkler, and J. Ignacio Hidalgo: **Multi-layer Analysis of Population Diversity in Grammatical Evolution for Symbolic Regression.** *Soft Computing*, Springer, June 2020. <https://doi.org/10.1007/s00500-020-05062-9>
- Klaus Arthofer, Marina Strobl, Julia Vetter, and Stephan M. Winkler: **Datenaufbereitung für KI braucht auch Governance: Governance für Medizin-Benchmarking.** *BI-Spektrum*, 2020.
- Constantin Aschauer, Kira Jelencsics, Karin Hu, Andreas Heinzl, Julia Vetter, Thomas Fraunhofer, Susanne Schaller, Stephan M. Winkler, Lisabeth Pimenov, Guido Gualdoni, Michael Eder, Alexander Kainz, Heinz Regele, Roman Reindl-Schwaighofer, and Rainer Oberbauer: **Next generation sequencing based assessment of the alloreactive T cell receptor repertoire in kidney transplant patients during rejection: a prospective cohort study.** *BMC Nephrology*, 2019.
- Renate Haselgrübler, Peter Lanzerstorfer, Clemens Röhl, Flora Stübl, Jonas Schurr, Bettina Schwarzinger, Clemens Schwarzinger, Mario Brameshuber, Stefan Wieser, Stephan M. Winkler, and Julian Weghuber: **Hypolipidemic effects of herbal extracts by reduction of adipocyte differentiation, intracellular neutral lipid content, lipolysis, fatty acid exchange and lipid droplet motility.** *Scientific Reports* 9, article no. 10492, 2019.
- Gabriel Kronberger, Michael Kommenda, Edwin Lughofer, Susanne Saminger-Platz, Andreas Promberger, Falk Nickel, Stephan M. Winkler, and Michael Affenzeller: **Using robust generalized fuzzy modeling and enhanced symbolic regression to model tribological systems.** *Applied Soft Computing*, Vol. 69, pp. 610–624. Elsevier, 2018.
- Viktoria Dorfer, Sergey Maltsev, Stephan M. Winkler, and Karl Mechtler: **CharmeRT: Boosting peptide identifications by chimeric spectra identification and retention time prediction.** *Journal of Proteome Research*, 17 (8), pp. 2581–2589, 2018.
- Sebastian Dorl, Stephan M. Winkler, Karl Mechtler, and Viktoria Dorfer: **PhoStar: Identifying Tandem Mass Spectra of Phosphorylated Peptides before Database Search.** *Journal of Proteome Research*, 17 (1), pp. 290–295, 2018.
- Almedina Kurtaj, Christoph Hillebrand, Gerda Fichtinger, Eva Hattinger, Melanie Lietzenmayer, Yoan Machado, Sandra Scheibhofer, Angelika Stoecklinger, Theresa Thalhamer, Susanne Suessner, Martin Danzer, Sabine Keplinger, Johannes Weinberger, Susanne Schaller, Stephan M. Winkler, Christian Gabriel, Josef Thalhamer, and Richard Weiss: **Natural protective immunity against grass pollen allergy is maintained by a diverse spectrum of response types.** *Journal of Allergy and Clinical Immunology*, 140(6), 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**. *Journal of Medical Systems*, 41(9), 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 Jaroslaw 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, Jaroslaw 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.
- Jaroslaw 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:

- Stephan M. Winkler, Andreas Haghofer, and Hannah Janout: **Learning based approaches for multimodal imaging**. Accepted to be published in *Imaging Modalities for Biological and Preclinical Research: A compendium*, IoP-IPEM ebook Series in Physics and Engineering in Medicine and Biology, 2020.
- Lukas Kammerer, Gabriel Kronberger, Bogdan Burlacu, Stephan M. Winkler, Michael Kommenda, and Michael Affenzeller: **Symbolic Regression by Exhaustive Search – Reducing the Search Space using Syntactical Constraints and Efficient Semantic Structure Deduplication**. Accepted to be published in *Genetic Programming Theory and Practice XVII*, Springer, 2020.
- Gabriel Kronberger, Lukas Kammerer, Bogdan Burlacu, Stephan M. Winkler, Michael Kommenda, and Michael Affenzeller: **Cluster Analysis of a Symbolic Regression Search Space**. *Genetic Programming Theory and Practice XVI*, Springer, 2019.
- J. Ignacio Hidalgo, J. Manuel Colmenar, J. Manuel Velasco, Gabriel Kronberger, Stephan M. Winkler, Oscar Garnica, and Juan Lanchares: **Identification of Models for Glucose Blood Values in Diabetics by Grammatical Evolution**. In C. Ryan et al (eds.): *Handbook of Grammatical Evolution*, pp. 367–393. Springer, 2018.
- Bogdan Burlacu, Michael Affenzeller, Michael Kommenda, Gabriel Kronberger, and Stephan M. Winkler: **Schema Analysis in Tree-Based Genetic Programming**. In *Genetic Programming Theory and Practice XV*, pp. 17–37, 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**. 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*, pp. 91-107, Springer, 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, Andreas Beham, Stefan Vonolfen, Erik Pitzer, Stephan M. Winkler, Stephan Hutterer, Michael Kommenda, Monika Kofler, Gabriel Kronberger, and Stefan Wagner: **Simulation-Based Optimization with HeuristicLab: Practical Guidelines and Real-World Applications**. In *Applied Simulation and Optimization*, pp. 3-38, 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 μ -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 Computation and Symbolic Regression in Scientific Modeling*. Habilitation Thesis for the *venia docendi* in “Data Based Modeling” Department for Computer Science, Johannes Kepler University Linz, Austria. 2018.

- 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:

- David Jödicke, Oscar Garnica, Gabriel Kronberger, José Manuel Colmenar, Stephan M. Winkler, Jose Manuel Velasco, Sergio Contador, and Ignacio Hidalgo: **Analysis of the Performance of Genetic Programming on the Blood Glucose Level Prediction Challenge 2020**. Accepted for publication in proceedings of *International Workshop on Knowledge Discovery in Healthcare Data*, 2020.
- Stefan Anlauf, Andreas Haghofer, Nina Affenzeller, and Stephan M. Winkler: **Data-Based Herbs Contamination Prediction and Harvest Recommendation**. Accepted for publication in proceedings of *International Food Operations and Processing Simulation Workshop*, I3M, 2020.
- Andreas Haghofer, Josef Scharinger, and Stephan M. Winkler, and Armin Hochreiner: **Evolutionary Optimization of Image Processing for Cell Detection in Microscopy Images**. *Proceedings of BIOIMAGING 2020*, Doctoral Consortium on Biomedical Engineering Systems and Technologies, Malta, 2020.
- Hannah Janout, Bianca Buchegger, Andreas Haghofer, Dominic Höglinger, Jaroslav Jacak, Stephan M. Winkler, and Armin Hochreiner: **PySpot: A Python based Framework for the Assessment of Laser-modified 3D Microstructures for Windows and Raspbian**. *Proceedings of BIOIMAGING 2020*, Malta, 2020.
- Michael Affenzeller, Bogdan Burlacu, Viktoria Dorfer, Sebastian Dorl, Gerhard Halmerbauer, Tilman Königswieser, Michael Kommenda, Julia Vetter, and Stephan M. Winkler: **White Box vs. Black Box Modeling: On the Performance of Deep Learning, Random Forests, and Symbolic Regression in Solving Regression Problems**. *Computer Aided Systems Theory - EUROCAST 2019*, Springer Lecture Notes in Computer Science, Vol. 12013, pp. 288–295, 2020.
- Kathrin Kefer, Roland Hanghofer, Patrick Kefer, Markus Stöger, Michael Affenzeller, Stephan M. Winkler, Stefan Wagner, and Bernd Hofer: **A Model-Based Learning Approach for Controlling the Energy Flows of a Residential Household Using Genetic Programming to Perform Symbolic Regression**. *Computer Aided Systems Theory - EUROCAST 2019*, Springer Lecture Notes in Computer Science, Vol. 12013, pp. 405–412, 2020.
- Stephan M. Winkler, Susanne Schaller, Viktoria Dorfer, Gabriel Kronberger, and Michael Affenzeller: **Machine Learning in Medizin- und Bioinformatik - Wie künstliche Intelligenz hilft, biologische und medizinische Prozesse zu verstehen**. In *Coming Soon – The Future of Work, Education & Living*, FH OÖ, 2019.
- Stephan M. Winkler and J. Rafael Sendra: **Fitness Landscape Analysis in the Optimization of Coefficients of Curve Parametrizations**. In *Computer Aided Systems Theory - EUROCAST 2017*, Springer Lecture Notes in Computer Science, Vol. 10671, pp. 464–472, 2018.
- Gabriel Kronberger, Bogdan Burlacu, Michael Kommenda, Stephan M. Winkler, and Michael Affenzeller: **Measures for the Evaluation and Comparison of Graphical Model Structures**. In *Computer Aided Systems Theory - EUROCAST 2017*, Springer Lecture Notes in Computer Science, Vol. 10671, pp. 283–290, 2018.
- Bogdan Burlacu, Michael Affenzeller, Michael Kommenda, Gabriel Kronberger, and Stephan M. Winkler: **Analysis of Schema Frequencies in Genetic Programming**. In *Computer Aided Systems Theory - EUROCAST 2017*, Springer Lecture Notes in Computer Science, Vol. 10671, pp. 432–438, 2018.
- 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**. In *Computer Aided Systems Theory - EUROCAST 2017*, Springer Lecture Notes in Computer Science, Vol. 10671, pp. 424–431, 2018.
- 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, Jaroslav 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, Jaroslav 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, Jaroslav 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, Jaroslav 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: **μ 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.
- Stephan M. Winkler, Michael Affenzeller, Gabriel Kronberger, Michael Kommenda, Stefan Wagner, Witold Jacak, and Herbert Stekel: **Analysis of Selected Evolutionary Algorithms in Feature Selection and Parameter Optimization for Data Based Tumor Marker Modeling**. *EUROCAST'11 Proceedings of the 13th International Conference on Computer Aided Systems Theory*, Vol. I, pp. 335-342, Springer-Verlag Berlin Heidelberg, 2012.
- Stephan M. Winkler, Michael Affenzeller, Gabriel Kronberger, Michael Kommenda, and Stefan Wagner: **Using Genetic Programming in Nonlinear Model Identification**. *Identification for Automotive Systems, Lecture Notes in Control and Information Systems 418*, pp. 89-109. Springer, 2012.
- Viktoria Dorfer, Sophie A. Blank, Stephan M. Winkler, Thomas Kern, Gerald Petz, and Patrizia Faschang: **Using Query Extension and User Feedback to Improve PubMed Search**. *Proceedings of the 23rd European Modeling and Simulation Symposium (EMSS2011)*, pp. 433-438. Rome, Italy, 2011.
- Michael Affenzeller, Christian Fischer, Gabriel Kronberger, Stephan M. Winkler, and Stefan Wagner: **New Genetic Programming Hypothesis Search Strategies for Improving the Interpretability in Medical Data Mining Applications**. *Proceedings of the 23rd European Modeling and Simulation Symposium (EMSS2011)*, pp. 448-453. Rome, Italy, 2011.
- Stephan M. Winkler, Michael Affenzeller, Gabriel Kronberger, Michael Kommenda, Stefan Wagner, Witold Jacak, and Herbert Stekel: **On the Use of Estimated Tumor Marker Classifications in Tumor Diagnosis Prediction - A Case Study for Breast Cancer**. *Proceedings of the 23rd European Modeling and Simulation Symposium (EMSS2011)*, pp. 454-459. Rome, Italy, 2011.
- Stephan M. Winkler, Michael Affenzeller, Witold Jacak, and Herbert Stekel: **Identification of cancer diagnosis estimation models using evolutionary algorithms: A case study for breast cancer, melanoma, and cancer in the respiratory system**. *Proceedings of the Genetic and Evolutionary Computation Conference (GECCO 2011)*, Dublin, Ireland, July 12-16, 2011, pp. 503-510. ACM, 2011, ISBN 978-1-4503-0690-4.
- Viktoria Dorfer, Stephan M. Winkler, Thomas Kern, Sophie A. Blank, Gerald Petz, and Patrizia Faschang: **On the performance of evolutionary algorithms in biomedical keyword clustering**. *Proceedings of the Genetic and Evolutionary Computation Conference (GECCO 2011)*, Dublin, Ireland, July 12-16, 2011, pp. 511-518. ACM, 2011, ISBN 978-1-4503-0690-4.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Analysis of the effects of enhanced selection concepts for genetic programming based structure identification using fine-grained population diversity estimation**. *Proceedings of the 13th Annual Genetic and Evolutionary Computation Conference - GECCO 2011, Companion Material Proceedings*, Dublin, Ireland, July 12-16, 2011, pp. 195-196. ACM, 2011, ISBN 978-1-4503-0690-4.

- Patrizia Faschang, Gerald Petz, Markus Wimmer, Viktoria Dorfer, and Stephan M. Winkler: **Evaluation of Tools for Opinion Mining**. *Proceedings of the International Conference on e-Learning, e-Business, EIS, and e-Government - EEE'11*, July 18-21, 2011, Las Vegas, USA, pp. 3-9. 2011.
- Luigi del Re, Markus Hirsch, Daniel Alberer, and Stephan M. Winkler: **The Role of Data Choice in Data Driven Identification for Online Emission Models**. *Proceedings of the 2011 IEEE Symposium on Computational Intelligence in Vehicles and Transportation Systems*, April 11-15, 2011, Paris, France, pp. 46 - 51. IEEE, 2011. ISBN: 978-1-4244-9975-5.
- Patrizia Faschang, Gerald Petz, Viktoria Dorfer, Thomas Kern, and Stephan M. Winkler: **Vorgehensmodell für Opinion Mining im Web 2.0**. *Tagungsband des 5. Forschungsforums der Österreichischen Fachhochschulen (Proceedings of the 5th Science Symposium of Austrian Universities for Applied Sciences)*, pp. 144-147. Österreichische Fachhochschulkonferenz (FHK), 2011. ISBN: 978-3-902614-16-2.
- Stefan Wagner, Michael Affenzeller, Andreas Beham, Gabriel Kronberger, and Stephan M. Winkler: **Mutationseffekte in genetischen Algorithmen mit Offspring Selection zur Lösung kombinatorischer Optimierungsprobleme**. *Tagungsband des 5. Forschungsforums der Österreichischen Fachhochschulen (Proceedings of the 5th Science Symposium of Austrian Universities for Applied Sciences)*. Österreichische Fachhochschulkonferenz (FHK), 2011. ISBN: 978-3-902614-16-2.
- Stefan Wagner, Andreas Beham, Gabriel Kronberger, Michael Kommenda, Erik Pitzer, Monika Kofler, Stefan Vonolfen, Stephan M. Winkler, Viktoria Dorfer, and Michael Affenzeller: **HeuristicLab 3.3: Ein erweiterbares und flexibles Software-System für heuristische Optimierung**. *Tagungsband des 5. Forschungsforums der Österreichischen Fachhochschulen (Proceedings of the 5th Science Symposium of Austrian Universities for Applied Sciences)*. Österreichische Fachhochschulkonferenz (FHK), 2011. ISBN: 978-3-902614-16-2.
- Stephan M. Winkler, Michael Affenzeller, Gabriel Kronberger, Stefan Wagner, Witold Jacak, and Herbert Stekel: **Feature Selection in the Analysis of Tumor Marker Data Using Evolutionary Algorithms**. *Proceedings of the 21st European Modeling and Simulation Symposium (EMSS2010)*, Fez, Morocco, October 2010, pp. 1-6. Fez, Morocco. October 2010.
- Viktoria Dorfer, Stephan M. Winkler, Gerald Petz, Andreas Greiner, and Thomas Kern: **Optimization of Keyword Grouping in Biomedical Information Retrieval Using Evolutionary Algorithms**. *Proceedings of the 21st European Modeling and Simulation Symposium (EMSS2010)*, Fez, Morocco, October 2010, pp. 25-30. Fez, Morocco. October 2010.
- Michael Affenzeller, Lukas Pöllabauer, Gabriel Kronberger, Erik Pitzer, Stefan Wagner, Stephan M. Winkler, Andreas Beham, and Monika Kofler: **On-Line Parameter Optimization Strategies for Metaheuristics**. *Proceedings of the 21st European Modeling and Simulation Symposium (EMSS2010)*, Fez, Morocco, October 2010, pp. 31-36.
- Stefan Wagner, Michael Affenzeller, Andreas Beham, Gabriel Kronberger, and Stephan M. Winkler: **Mutation Effects in Genetic Algorithms with Offspring Selection Applied to Combinatorial Optimization Problems**. *Proceedings of the 21st European Modeling and Simulation Symposium (EMSS2010)*, Fez, Morocco, October 2010, pp. 43-48.
- Gabriel Kronberger, Stephan M. Winkler, Michael Affenzeller, Michael Kommenda, Stefan Wagner: **Effects of Mutation before and after Offspring Selection in Genetic Programming for Symbolic Regression**. *Proceedings of the 21st European Modeling and Simulation Symposium (EMSS2010)*, Fez, Morocco, October 2010, pp. 37-42.
- Michael Kommenda, Gabriel Kronberger, Michael Affenzeller, Stephan M. Winkler, and Stefan Wagner: **Symbolic Regression with Sampling**. *Proceedings of the 21st European Modeling and Simulation Symposium (EMSS2010)*, Fez, Morocco, October 2010, pp. 13-18.
- Christian Fischer, Lukas Bloder, Christoph Neumüller, Sebastian Pimminger, Michael Affenzeller, Stephan M. Winkler, Herbert Stekel, and Rupert Frechinger: **Prediction of Blood Demands in a Hospital**. *Proceedings of the 21st European Modeling and Simulation Symposium (EMSS2010)*, Fez, Morocco, October 2010, pp. 7-12.
- Stefan Wagner, Andreas Beham, Gabriel Kronberger, Michael Kommenda, Erik Pitzer, Monika Kofler, Stefan Vonolfen, Stephan M. Winkler, Viktoria Dorfer, and Michael Affenzeller: **HeuristicLab 3.3: A Unified Approach to Metaheuristic Optimization**. *Proceedings of the VII Congreso Espanol sobre Metaheurísticas, Algoritmos Evolutivos y Bioinspirados (MAEB 2010)*, Valencia, Spain, 2010.
- Stephan M. Winkler, Michael Affenzeller, Witold Jacak, and Herbert Stekel: **Classification of Tumor Marker Values Using Heuristic Data Mining Methods**. *Proceedings of the Genetic and Evolutionary Computation Conference GECCO 2010*, paper no. ws5p2. The Association for Computing Machinery (ACM), 2010.
- Michael Affenzeller, Stefan Wagner, Stephan M. Winkler, and Andreas Beham: **Analysis of the Dynamics of Allele Distribution for Some Selected GA-Variants**. *International Conference on Intelligent Engineering Systems (INES 2010)*, paper no. 2. IEEE Xplore, 2010.

- Stephan M. Winkler, Michael Affenzeller, Stefan Wagner, Gabriel Kronberger, and Michael Kommenda: **Analyse der Strukturellen Ähnlichkeit von Mathematischen Modellen im Zusammenhang mit Genetischer Programmierung**. *Tagungsband des 4. Forschungsforums der Österreichischen Fachhochschulen (Proceedings of the 4th Science Symposium of Austrian Universities for Applied Sciences)*, pp. 315-320. Österreichische Fachhochschulkonferenz (FHK), 2010. ISBN: 978-3-200-01809-9.
- Stephan M. Winkler, Stefanie Auer, and Michael Affenzeller: **Heuristische Modellierung der Krankheitsverlaufsdaten von Menschen mit Alzheimer Demenz**. *Tagungsband des 4. Forschungsforums der Österreichischen Fachhochschulen (Proceedings of the 4th Science Symposium of Austrian Universities for Applied Sciences)*, pp. 23-28. Österreichische Fachhochschulkonferenz (FHK), 2010. ISBN: 978-3-200-01809-9.
- Stephan M. Winkler, Stefanie Auer, Michael Affenzeller, Yvonne Donabauer, and Barry Reisberg: **Heuristic Modeling of the Mental Progress of Persons with Normal Brain Aging, Subjective Cognitive Impairment, Mild Cognitive Impairment, Alzheimer's Disease and Related Dementia Disorders**. *Proceedings of the 20th European Modeling and Simulation Symposium (EMSS2009)*, pp. 167-172. Puerto de la Cruz, Tenerife, Spain. September 2009.
- Gabriel Kronberger, Christoph Feilmayr, Michael Kommenda, Stephan M. Winkler, Michael Affenzeller, and Thomas Bürgler: **System-Identification of Blast Furnace Processes with Genetic Programming**. *Proceedings of the 2nd International Symposium on Logistics and Industrial Informatics LINDI 2009*. IEEE Publications, 2009.
- Michael Kommenda, Gabriel Kronberger, Stephan M. Winkler, Michael Affenzeller, Stefan Wagner, Leonhard Schickmair, and Benjamin Lindner: **Application of Genetic Programming on Temper Mill Datasets**. *Proceedings of the 2nd International Symposium on Logistics and Industrial Informatics LINDI 2009*. IEEE Publications, 2009.
- Gabriel Kronberger, Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **On Crossover Success Rate in Genetic Programming with Offspring Selection**. *Proceedings of the 12th European Conference on Genetic Programming EuroGP 2009*, pp. 232-243. Springer Lecture Notes in Computer Science, 2009.
- Stephan M. Winkler, Markus Hirsch, Michael Affenzeller, Luigi del Re, and Stefan Wagner: **Virtual Sensors for Emissions of a Diesel Engine Produced by Evolutionary System Identification**. *Computer Aided Systems Theory - EUROCAST 2009; Lecture Notes in Computer Science*, Vol. 5717, pp. 657-664. 2009.
- Stefan Wagner, Gabriel Kronberger, Andreas Beham, Stephan M. Winkler, and Michael Affenzeller: **Model Driven Rapid Prototyping of Heuristic Optimization Algorithms**. *Computer Aided Systems Theory - EUROCAST 2009; Lecture Notes in Computer Science*, Vol. 5717, pp. 729-736. 2009.
- Gabriel Kronberger, Stephan M. Winkler, Michael Affenzeller, Andreas Beham, and Stefan Wagner: **On the Success Rate of Crossover Operators for Genetic Programming with Offspring Selection**. *Computer Aided Systems Theory - EUROCAST 2009; Lecture Notes in Computer Science*, Vol. 5717, pp. 793-800. 2009.
- Rene Mayrhofer, Stephan M. Winkler, Helmut Hlavacs, Michael Affenzeller, and Stefan Schneider: **On Structural Identification of 2D Regression Functions for In-door Bluetooth Localisation**. *Computer Aided Systems Theory - EUROCAST 2009; Lecture Notes in Computer Science*, Vol. 5717, pp. 801-808. 2009.
- Michael Affenzeller, Stephan M. Winkler, Andreas Beham, and Stefan Wagner: **On the Influence of Selection Schemes on the Genetic Diversity in Genetic Algorithms**. *Computer Aided Systems Theory - EUROCAST 2009; Lecture Notes in Computer Science*, Vol. 5717, pp. 777-784. 2009.
- Michael Affenzeller, Andreas Beham, Stefan Wagner, and Stephan M. Winkler: **About the Dynamics of Essential Genetic Information: An Empirical Analysis for Selected GA-Variants**. *Proceedings of the 2009 World Summit on Genetic and Evolutionary Computation (2009 GEC Summit)*, pp. 787-790. Association for Computing Machinery, 2009.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Fine Grained Population Diversity Analysis for Parallel Genetic Programming**. *Proceedings of the 12th International Workshop on Nature Inspired Distributed Computing NIDISC '09, part of the Proceedings of the 23rd IEEE International Parallel & Distributed Processing Symposium IPDPS 2009*. IEEE, 2009.
- Stephan M. Winkler, Michael Affenzeller, Stefan Wagner, and Gabriel Kronberger: **Analyse von Patientendaten und Evolutionäres Design von Virtuellen Sensoren für Erkrankungen (Analysis of Patient Data and Evolutionary Design of Virtual Sensors for Diseases)**. *Tagungsband des 3. Forschungsforums der Österreichischen Fachhochschulen (Proceedings of the 3rd Science Symposium of Austrian Universities for Applied Sciences)*, pp. 56-61. Österreichische Fachhochschulkonferenz (FHK), 2009.

- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Der Einsatz von Genetischer Programmierung in der Mechatronik**. *Proceedings of the International Forum on Mechatronics 2008 (Internationales Forum Mechatronik 2008)*, pp. 344-359. ISBN 978-3-00-025245-7. Kompetenznetzwerk Mechatronik BW e.V., September 2008.
- Stephan M. Winkler, Markus Hirsch, Michael Affenzeller, Luigi del Re, Stefan Wagner: **Incorporating Physical Knowledge about the Formation of Nitric Oxides into Evolutionary System Identification**. *Proceedings of the 20th European Modeling and Simulation Symposium (EMSS2008)*, pp. 69-74. Campora San Giovanni, Italy. September 2008.
- Stefan Wagner, Gabriel Kronberger, Andreas Beham, Stephan M. Winkler, Michael Affenzeller: **Modeling of Heuristic Optimization Algorithms**. *Proceedings of the 20th European Modeling and Simulation Symposium (EMSS2008)*, pp. 106-111. Campora San Giovanni, Italy. September 2008.
- Gabriel Kronberger, Stephan M. Winkler, Michael Affenzeller, Stefan Wagner: **Data Mining via Distributed Genetic Programming Agents**. *Proceedings of the 20th European Modeling and Simulation Symposium (EMSS2008)*, pp. 95-99. Campora San Giovanni, Italy. September 2008.
- Michael Affenzeller, Stephan M. Winkler, and Stefan Wagner: **Effective Allele Preservation by Offspring Selection: An Empirical Study for the TSP**. *Proceedings of the 20th European Modeling and Simulation Symposium (EMSS2008)*, pp. 59-68. Campora San Giovanni, Italy. September 2008.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Fine-Grained Population Diversity Estimation for Genetic Programming Based Structure Identification**. *Proceedings of the Genetic and Evolutionary Computation Conference GECCO 2008*, pp. 1435-1436. The Association for Computing Machinery (ACM), ISBN 978-1-60558-131-6, ACM Order Number 910081. 2008.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **On the Reliability of Nonlinear Modeling Using Enhanced Genetic Programming Techniques**. *Proceedings of the Chaotic Modeling and Simulation International Conference CHAOS 2008*, paper number 207. Mediterranean Agronomic Institute of Chania; Swets. 2008.
- Andreas Beham, Stephan M. Winkler, Stefan Wagner, and Michael Affenzeller: **A Genetic Programming Approach to Solve Scheduling Problems with Parallel Simulation**. *Proceedings of the 22nd IEEE International Parallel & Distributed Processing Symposium (IPDPS08)*. Miami, Florida USA, April 14-18, 2008. IEEE, 2008.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Offspring Selection and its Effects on Genetic Propagation in Genetic Programming Based System Identification**. *Cybernetics and Systems 2008*, Vol. II, pp. 549-554. Austrian Society for Cybernetic Studies, ISBN 978-3-85206-175-7. 2008.
- Stephan M. Winkler, Bernd Brandl, Michael Affenzeller, and Stefan Wagner: **Zeitreihenanalyse von Finanzdaten unter Verwendung von erweiterten Methoden der Genetischen Programmierung**. *Proceedings of the First Science Symposium of the Austrian Universities for Applied Sciences 2007 (Tagungsband des Ersten Forschungsforums der Österreichischen Fachhochschulen 2007)*, pp. 213-218. Martin Meidenbauer Verlagsbuchhandlung, 2008.
- Stephan M. Winkler, Michael Affenzeller, Stefan Wagner, Gabriel Kronberger, and Andreas Beham: **Evolutionäres Design von Virtuellen Sensoren**. *Proceedings of the Industrial Symposium Mechatronics 2007 on Sensorics*, pp. 166-175. Clusterland Oberösterreich, ISBN 978-3-9502270-1-7. 2007.
- Michael Affenzeller, Gabriel Kronberger, Stephan M. Winkler, M. Ionescu, and Stefan Wagner: **Heuristic Optimization Methods for the Tuning of Input Parameters of Simulation Models**. *Proceedings of I3M 2007*, pp. 278-283. DIPTeM Università di Genova, ISBN 88-900732-6-8. 2007.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Variables Diversity in Systems Identification Based on Extended Genetic Programming**. *Proceedings of the 15th International Conference on Systems Science*, Vol. II, pp. 470-479. Oficyna Wydawnicza Politechniki Wrocławskiej. 2007.
- Michael Affenzeller, Stefan Wagner, and Stephan M. Winkler: **Aspects of Adaptation in Natural and Artificial Evolution**. *Proceedings of the Genetic and Evolutionary Computation Conference 2007*, pp. 2595-2602. The Association for Computing Machinery (ACM), 2007.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Selection Pressure Driven Sliding Window Genetic Programming**. *Computer Aided Systems Theory - EUROCAST 2007*. Lecture Notes in Computer Science 4739, pp. 788-795. Springer, 2007.
- Michael Affenzeller, Stefan Wagner, and Stephan M. Winkler: **Self-Adaptive Population Size Adjustment for Genetic Algorithms**. *Computer Aided Systems Theory - EUROCAST 2007*. Lecture Notes in Computer Science 4739, pp. 820-828. Springer, 2007.
- Stefan Wagner, Stephan M. Winkler, Roland Braune, Gabriel Kronberger, Andreas Beham, and Michael Affenzeller: **Benefits of Plugin-Based Heuristic Optimization Software Systems**. *Computer Aided Systems Theory - EUROCAST 2007*. Lecture Notes in Computer Science 4739, pp. 747-754. Springer, 2007.

- Stephan M. Winkler, Hajrudin Efendic, and Luigi del Re: **Quality Pre-Assessment in Steel Industry Using Data Based Estimators**. In: S. Cierpisz, K. Miskiewicz, A. Heyduk (ed.), *Proceedings of the IFAC Workshop MMM'2006 on Automation in Mining, Mineral and Metal Industry*, pp. 185-190. International Federation for Automatic Control, 2006.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **HeuristicModeler: A Multi-Purpose Evolutionary Machine Learning Algorithm and its Applications in Medical Data Analysis**. In: A. Bruzzone, A. Guasch, M. Piera, J. Rozenblit (ed.), *Proceedings of the International Mediterranean Modelling Multiconference I3M 2006*, pp. 629-634. Piera, LogiSim, Barcelona, Spain, 2006.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Using Enhanced Genetic Programming Techniques for Evolving Classifiers in the Context of Medical Diagnosis - An Empirical Study**. *Proceedings of the Genetic and Evolutionary Computation Conference GECCO 2006*, paper no. WKSP115. The Association for Computing Machinery (ACM), 2006.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Sets of Receiver Characteristic Curves and their Use in the Evaluation of Multi-Class Classification**. *Proceedings of the Genetic and Evolutionary Computation Conference GECCO 2006*, Vol. 2, pp. 1601-1602. The Association for Computing Machinery (ACM), 2006.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Advances in Applying Genetic Programming to Machine Learning, Focussing on Classification Problems**. *Proceedings of the 9th International Workshop on Nature Inspired Distributed Computing NIDISC '06, part of the Proceedings of the 20th IEEE International Parallel & Distributed Processing Symposium IPDPS 2006*, IEEE Catalog Number: 06TH8860, ISBN: 1-4244-0054-6, ISSN: 1530-2075, paper no. NIDISC-012. IEEE, 2006.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Automatic Data Based Patient Classification Using Genetic Programming**. In *Cybernetics and Systems 2006*, Vol. 1, pp. 251-256. Austrian Society for Cybernetic Studies, 2006.
- Peter Langthaler, Daniel Alberer, Stephan M. Winkler, and Luigi del Re: **Design eines virtuellen Sensors für Partikelmessung am Dieselmotor**. *Proceedings of the 14th Styrian Seminar on Control Engineering and Prozess Automation*, pp. 71-87. 2005.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **A Genetic Programming Based Tool for Supporting Bioinformatical Classification Problems**. *Proceedings of the FH Science Day 2005*, pp. 3-10. Shaker Verlag, 2005.
- Daniel Alberer, Luigi del Re, Stephan M. Winkler, and Peter Langthaler: **Virtual Sensor Design of Particulate and Nitric Oxide Emissions in a DI Diesel Engine**. *Proceedings of the 7th International Conference on Engines for Automobile ICE 2005*. 2005.
- Stephan M. Winkler, Hajrudin Efendic, Michael Affenzeller, Luigi del Re, and Stefan Wagner: **On-Line Modeling Based on Genetic Programming**. *Proceedings of the 1st International Workshop on Automatic Learning and Real-Time (ALaRT'05)*, pp. 119-130. Institute of Real-Time Learning Systems, University Siegen, Germany. 2005.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Genetic Programming Based Model Structure Identification Using On-Line System Data**. *Proceedings of Conceptual Modeling and Simulation Conference CMS 2005*. 2005.
- Michael Affenzeller, Stefan Wagner, and Stephan M. Winkler: **Goal-Oriented Preservation of Essential Genetic Information by Offspring Selection**. *Proceedings of the Genetic and Evolutionary Computation Conference (GECCO) 2005*, Vol. 2, pp. 1595-1596. The Association for Computing Machinery (ACM), 2005.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Solving Multiclass Classification Problems by Genetic Programming**. *Proceedings of The 9th World Multi-Conference on Systemics, Cybernetics and Informatics SCI 2005*, Vol. 1, pp. 48-53. International Institute of Informatics and Systemics, 2005.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **New Methods for the Identification of Nonlinear Model Structures Based Upon Genetic Programming Techniques**. *Proceedings of the 15th International Conference on Systems Science*, Oficyna Wydawnicza Politechniki Wrocławskiej. 2004.
- Stephan M. Winkler, Michael Affenzeller, and Stefan Wagner: **Identifying Nonlinear Model Structures Using Genetic Programming Techniques**. *Cybernetics and Systems 2004*, pages 689-694. Austrian Society for Cybernetic Studies. 2004.

Poster Presentations:

- Julia Vetter, Andreas Heinzl, Constantin Aschauer, Roman Reindl-Schwaighofer, Rainer Oberbauer, Stephan M. Winkler, and Susanne Schaller: **A Bioinformatics Pipeline for the Identification of Crucial Factors for Transplant Rejection based on NGS Data**. *American Transplant Congress*, 2020.

- Gerhard Halmerbauer, Klaus Arthofer, Stephan M. Winkler, and Tilman Königswieser: **Web-based Benchmarking Platform Provides Clinical Departments with Monthly Updates about Processes of Care, Costs and Outcome.** *International Society for Quality in Health Care Conference*, Cape Town, 2019.
- Gerhard Halmerbauer, Klaus Arthofer, Judith Guttman, Tilman Königswieser, Soodeh Peyvandi, Andreas Shamiyeh, Marina Strobl, Julia Vetter, and Stephan M. Winkler: **LeiVMed II: Ein Web-Basiertes Benchmarking-System für die Analyse von Behandlungsprozessen, Outcome und Kosten.** *Kepler Science Day*, Linz, 2019.
- Viktoria Dorfer, Viktoria Leitner, Quang-Minh Thai, Susanne Schaller, Barbara Sikic, Verena Aistleitner, Gerd Müller, Benjamin Dieplinger, Michael Hirthammer, Stephan M. Winkler, and Gerhard Engelbrecht: **Entwicklung eines Indikatortools auf Papierbasis und eines Kommunikationskonzepts für die Früherkennung von Glukosurie.** *Kepler Science Day*, Linz, 2019.
- Georg Pirklbauer, Christian Stieger, Stephan M. Winkler, Karl Mechtler, and Viktoria Dorfer: **MS Annika: An Integrated Search Tool for the Identification of Cross-Linked Peptides from Mass Spectrometry Data.** *Austrian Proteomics and Metabolomics Research Symposium 2019*, Salzburg, 2019.
- Julia Vetter, Jonathan Burghofer, Theodora Malli, Gerald Webersinke, Wolfgang Kranewitter, Markus Wiederstein, Susanne Schaller, and Stephan M. Winkler: **A Bioinformatics Pipeline for Identifying Point Mutations in CML Patients.** *27th Annual International Conference on Intelligent Systems for Molecular Biology – ISMB 2019*.
- Roman Reindl-Schwaighofer, Julia Vetter, Johannes Weinberger, Susanne Schaller, Andreas Heinzl, Guido Gualdoni, Constantin Aschauer, Kira Jelencsics, Karin Hu, Stephan M. Winkler, and Rainer Oberbauer: **T Cell Repertoire of Tissue Infiltrating T-cells at Time of Rejection.** *American Transplant Congress 2019*, Boston, MA, 2019.
- Sebastian Dorl, Stephan M. Winkler, Karl Mechtler, and Viktoria Dorfer: **MS Ana: A Spectral Library Search Engine Optimized for High-Accuracy Fragment Ion Data.** *European Bioinformatics Community (EuBIC) Winter School 2019*, Zakopane, 2019.
- Georg J. Pirklbauer, Christian E. Stieger, Daniela Borgmann, Stephan M. Winkler, Karl Mechtler, and Viktoria Dorfer: **MS Annika: A new Search Engine for Identifying Peptides from MS Cleavable Crosslink Data.** *European Bioinformatics Community (EuBIC) Winter School 2019*, Zakopane, 2019.
- Julia Vetter, Gerhard Halmerbauer, Klaus Arthofer, Susanne Schaller, Andreas Shamiyeh, Walter Schauer, Tilman Königswieser, Christoph Ausch, and Stephan M. Winkler: **(Retrospektive) Prädiktion von medizinischen Komplikationen auf Basis von Routinedaten in Krankenhäusern mittels Multi-Model-Ensembles.** *Kepler Science Day*, Linz, 2018.
- Andreas Haghofer, Jaroslaw Jacak, Stephan M. Winkler, and Johannes Breuss: **Automatisiertes Tracking von Zellen in Mikroskopie-Aufnahmen und evolutionäre Optimierung von Bildverarbeitung.** *Kepler Science Day*, Linz, 2018.
- Georg J. Pirklbauer, Stephan M. Winkler, Karl Mechtler, and Viktoria Dorfer: **Extensions to Peptide Spectrum Match Validation by Semi-Supervised Machine Learning Methods.** *German Conference on Bioinformatics*, Vienna, 2018.
- Julia Vetter, Stephan M. Winkler, Thomas Fraunhofer, and Susanne Schaller: **High-throughput Immune Repertoire Sequencing Analysis using the Software ImmunExplorer.** *German Conference on Bioinformatics*, Vienna, 2018.
- Stephan M. Winkler, Susanne Schaller, Viktoria Dorfer, Andreas Haghofer, Julia Vetter, and Michael Affenzeller: **White Box Modeling, Variable Impact Analysis, and Interaction Network Identification in Biological and Medical Data Using Symbolic Regression.** *German Conference on Bioinformatics*, Vienna, 2018.
- Stephan M. Winkler, Johannes Zipperle, and Heinz Redl: **ScienceMapper.** *26th Annual International Conference on Intelligent Systems for Molecular Biology – ISMB 2018*.
- Andreas Haghofer, Daniela Borgmann, Jaroslaw Jacak, and Stephan M. Winkler: **Automatisierte Parameteroptimierung zur Analyse von Mikroskopieaufnahme-Sequenzen durch evolutionäre Algorithmen.** *Kepler Science Day*, Linz, 2017.
- Viktoria Dorfer, Sergey Maltsev, Stephan M. Winkler, and Karl Mechtler: **Identifying co-eluting peptides using MS Amanda and Elutator.** *65th ASMS Conference on Mass Spectrometry and Allied Topics*, Indianapolis, 2017.
- Michael D. Brodesser, Sandra Mayr, Fabian Hauser, Johannes Breuss, Michael Aspetsberger, Andreas Hangler, Lukas Bindreiter, Daniela Borgmann, Stephan M. Winkler, Christian Gabriel, Eleni Priglinger, Jaroslaw Jacak, and Birgit Plochberger: **A Fast and Reliable Online-System for Platelet Viability Studies.** *61st Annual Meeting of the Biophysical Society*, New Orleans, February 2017; *Biophysical Journal*, Vol. 112/3/146a.

- J. Ignacio Hidalgo, Esther Maqueda, Stephan M. Winkler, Gabriel Kronberger, J. Manuel Colmenar, Marta Botella, J. Manuel Velasco, Sergio Contador, Almudena Sánchez, Oscar Garnica, and Juan Lanchares: **Classification, Modeling and Prediction of Glycemia in Diabetic Patients by Evolutionary and Heuristic Computation from Continuous Glucose Monitoring, Carbohydrates and Insulin Records.** *10th International Conference on Advanced Technologies & Treatments for Diabetes (ATTD 2017)*, Paris, February 2017.
- Sebastian Dörl, Viktoria Dorfer, Karl Mechtler, and Stephan M. Winkler: **Identifying tandem mass spectra of phosphorylated peptides before database search using machine-learning.** *EUBIC Winter School for Proteomics Bioinformatics*, Semmering, January 2017.
- Daniela M. Borgmann, Serge Weis, Peter Strasser, and Stephan M. Winkler: **Dementia Classification and Recognition Based on Neuropathological, Haematological, and Genetic Data.** *ECCB 2016 – 15th European Conference on Computational Biology*, Den Haag, September 2016.
- Susanne Schaller, Johannes Weinberger, Sandra Mayr, Thomas Stüttler, Peter Lackner, and Stephan M. Winkler: **New Developments in ImmunExplorer: From NGS Data Over Machine Learning To Health State Prediction.** *ECCB 2016 – 15th European Conference on Computational Biology*, Den Haag, September 2016.
- Sandra Mayr, Daniela Borgmann, Helene Polin, Susanne Schaller, Lisa Obritzberger, Viktoria Dorfer, Christian Gabriel, Stephan M. Winkler, and Jaroslav Jacak: **Rhesus D Expression Classification on Red Blood Cells using High-Resolution Fluorescence Microscopy and Machine Learning.** *60th Annual Meeting of the Biophysical Society*, Los Angeles, California, February 2016.
- J. Ignacio Hidalgo, Esther Maqueda, J. Manuel Velasco, Stephan M. Winkler, Almudena Sánchez, J. Manuel Colmenar, Oscar Garnica, Juan Lanchares, Marta Botella, J. Antonio Rubio, and Iván Contreras: **Comparing Genetic Programming Techniques and Classical Methods on the Identification of Prediction Models.** *9th International Conference on Advanced Technologies & Treatments for Diabetes (ATTD 2016)*, Milano, February 2016.
- Sandra Mayr, Daniela Borgmann, Helene Polin, Tanja Endmayr, Susanne Schaller, Lisa Obritzberger, Viktoria Dorfer, Christian Gabriel, Stephan M. Winkler, and Jaroslav Jacak: **Automated Classification of Rhesus D Antigen Expression on Erythrocytes.** *XVIII. Annual Linz Winter Workshop*, JKU Linz, January 2016.
- Sandra Mayr, Daniela Borgmann, Helene Polin, Susanne Schaller, Lisa Obritzberger, Viktoria Dorfer, Christian Gabriel, Stephan M. Winkler, and Jaroslav Jacak: **Automated Classification of Rhesus D Antigen Expression on Erythrocytes at Single Molecule Level.** *Single-Molecule Microscopy and Spectroscopy: Faraday Discussion*, London, September 2015.
- Susanne Schaller, Johannes Weinberger, Raul Jimenez-Heredia, Martin Danzer, and Stephan M. Winkler: **ImmunExplorer (IMEX): A detailed analysis of the health status of the immune system using NGS immunoglobulin and T cell receptor IMGT HighV-QUEST data.** *4th European Congress of Immunology Vienna 2015*.
- Susanne Schaller, Johannes Weinberger, Raul Jimenez-Heredia, Martin Danzer, Rainer Oberbauer, Christian Gabriel, and Stephan M. Winkler: **An Automated Workflow for Analyzing Human Immune System States Using ImmunExplorer.** *23rd Annual International Conference on Intelligent Systems for Molecular Biology – ISMB 2015*.
- Daniela Borgmann, Peter Lanzerstorfer, Verena Stadlbauer, Ulrike Müller, Stephan M. Winkler, and Julian Weghuberand : **Bioinformatic analysis of total internal reflection fluorescence microscopy (TIRFM) data in context of type 2 diabetes and cancer signaling.** *23rd Annual International Conference on Intelligent Systems for Molecular Biology – ISMB 2015*.
- Viktoria Dorfer, Sergey Maltsev, Stephan M. Winkler, and Karl Mechtler: **Chimeric MS/MS Spectra Identification using MS Amanda.** *63rd ASMS Conference on Mass Spectrometry and Allied Topics*, St. Louis, MO, 2015.
- Viktoria Dorfer, Julia Hafenschner, Stephan M. Winkler, and Karl Mechtler: **Supporting standard data formats with MS Amanda Stand-Alone.** *9th European Summer School on Advanced Proteomics*, Brixen, 2015.
- Sandra Mayr, Daniela M. Borgmann, Helene Polin, Susanne Schaller, Christian Gabriel, Jaroslav Jacak, and Stephan M. Winkler: **Characterization of Rare Aberrant D Antigens on Erythrocyte Cell Surfaces using Single Molecule Fluorescence Microscopy and Machine Learning.** *XVII. Annual Linz Winter Workshop*, JKU Linz, 2015.
- Susanne Schaller, Johannes Weinberger, Martin Danzer, and Stephan M. Winkler: **Detailed Analysis of Clonality, Diversity, and Gene Frequency Distributions in B- & T-Cell Receptors based on NGS Data.** *Revolutionizing Next-Generation Sequencing: Tools and Technologies*. Leuven, Belgium, January 2015.

- Michael Kommenda and Stephan M. Winkler: **Parameteridentifikation mittels heuristischer Optimierung.** *Science Symposium of Austrian Universities for Applied Sciences*, Hagenberg, Austria, 2015.
- Viktoria Dorfer, Peter Pichler, Thomas Stranzl, Gerhard Dürnberger, Stephan M. Winkler, and Karl Mechtler: **A standalone version of MS Amanda for integration into proteomics workflows.** *Human Proteome Organization 13th Annual World Congress*, Madrid, Spain, October 5–8, 2014.
- Susanne Schaller, Johannes Weinberger, Martin Danzer, Christian Gabriel, and Stephan M. Winkler: **ImmunExplorer: A Framework for NGS-based Characterization and Visualization of the Human Immune System.** *22nd Annual International Conference on Intelligent Systems for Molecular Biology – ISMB 2014*, Boston, MA, USA, July 11–15, 2014.
- Viktoria Dorfer, Peter Pichler, Thomas Stranzl, Stephan M. Winkler, and Karl Mechtler: **MS Amanda Stand-Alone for integration in proteomics workflows.** *62nd ASMS Conference on Mass Spectrometry and Allied Topics*, Baltimore, MD, June 15–19, 2014.
- Viktoria Dorfer, Peter Pichler, Stephan M. Winkler, and Karl Mechtler: **MS Amanda: A novel algorithm for the identification of high accuracy tandem mass spectrometry data.** *Austrian Proteomic Research Symposium*, Innsbruck, 2013.
- Susanne Schaller, Jaroslaw Jacak, Peter Bettelheim, Daniel Gschwandtner, and Stephan M. Winkler: **Analyzing Motion Characteristics of Single Molecules for Providing Evidence of PNH in Microscopy Images.** *21st Annual International Conference on Intelligent Systems for Molecular Biology – ISMB 2013*, July 19–23, 2013, Berlin, Germany.
- Viktoria Dorfer, Peter Pichler, Stephan M. Winkler, and Karl Mechtler: **MS Amanda: A Novel Algorithm for the Identification of High Accuracy Tandem Mass Spectrometry Data.** *61st ASMS Conference on Mass Spectrometry and Allied Topics*, Minneapolis, MN, June 8 - 9, 2013.
- Stephan M. Winkler, Michael Affenzeller, Witold Jacak, and Herbert Stekel: **Datenbasierte Identifikation von Prädiktoren für Tumormarker: Virtuelle Tumormarker.** *7. Forschungsforums der Österreichischen Fachhochschulen (7th Science Symposium of Austrian Universities of Applied Sciences)*, 2013.
- Michael Affenzeller, Stephan M. Winkler, Witold Jacak, and Herbert Stekel: **Datenbasierte Vorhersagemodellierung von Krebs anhand von Blutdaten.** *7. Forschungsforums der Österreichischen Fachhochschulen (7th Science Symposium of Austrian Universities of Applied Sciences)*, 2013.
- Jaroslaw Jacak, Susanne Schaller, Daniela Borgmann, Michael Sams, and Stephan M. Winkler: **A Spatial Analysis Approach for the Classification of Fluorescent Based Localization Microscopy Images.** *Linz Winter Workshop*, Johannes Kepler University Linz, 2013.
- Viktoria Dorfer, Peter Pichler, Stephan M. Winkler, and Karl Mechtler: **Identifying HCD & ETD Spectra - A New Approach.** *Austrian Proteomic Research Symposium*, Graz, 2012.
- Stephan M. Winkler, Michael Affenzeller, Witold Jacak, and Herbert Stekel: **Data Based Prediction of Tumor Diagnoses and the Role of Tumor Markers.** *20th Annual International Conference on Intelligent Systems for Molecular Biology – ISMB 2012*, July 13–17, 2012, Long Beach, CA, USA.
- Susanne Schaller, Witold Jacak, Daniela Borgmann, Julian Weghuber, and Stephan M. Winkler: **An Image Analysis Suite for Automated Spot Detection in Cellular and Nano Structures of Microscopy Images.** *20th Annual International Conference on Intelligent Systems for Molecular Biology – ISMB 2012*, July 13–17, 2012, Long Beach, CA, USA.
- Stephan M. Winkler, Michael Affenzeller, Witold Jacak, and Herbert Stekel: **Heuristic Tumor Markers – Data Based Identification of Classification Models for Tumor Markers.** *Jahrestagung der Deutschen, Österreichischen und Schweizerischen Gesellschaften für Hämatologie und Onkologie 2011*, September 30 – October 4, 2011, Basel, Switzerland.
- Michael Affenzeller, Stephan M. Winkler, Witold Jacak, and Herbert Stekel: **Cancer Prediction Models Based on Blood Data with and without Tumor Marker Information.** *Jahrestagung der Deutschen, Österreichischen und Schweizerischen Gesellschaften für Hämatologie und Onkologie 2011*, September 30 – October 4, 2011, Basel, Switzerland.
- Viktoria Dorfer, Stephan M. Winkler, Thomas Kern, Sophie A. Blank, Gerald Petz, and Patrizia Faschang: **Keyword Clustering in Biomedical Information Retrieval Using Evolutionary Algorithms.** *19th Annual International Conference on Intelligent Systems for Molecular Biology and 10th European Conference on Computational Biology – ISMB/ECCB 2011*, July 17–19, 2011, Vienna, Austria.
- Stephan M. Winkler, Michael Affenzeller, Gabriel Kronberger, Michael Kommenda, Stefan Wagner, Witold Jacak, and Herbert Stekel: **Data Based Identification of Estimation Models for Tumor Markers Using Evolutionary Computation.** *19th Annual International Conference on Intelligent Systems for Molecular Biology and 10th European Conference on Computational Biology – ISMB/ECCB 2011*, July 17–19, 2011, Vienna, Austria.

- Michael Affenzeller, Stephan M. Winkler, and Herbert Stekel: **Prediction of Lung Cancer on the Basis of Blood Data**. *IFCC-WorldLab/EuroMedLab*, May 15–19, 2011, Berlin, Germany.
- Stephan M. Winkler, Michael Affenzeller, and Herbert Stekel: **Genetic Programming for the Data Based Generation of Medical Diagnosis Models**. *IFCC-WorldLab/EuroMedLab*, May 15–19, 2011, Berlin, Germany.
- Stephan M. Winkler, Michael Affenzeller, Witold Jacak, and Herbert Stekel: **Data Based Prediction of Classification of Tumor Markers AFP, CA-125, CA15-3, CEA, CYFRA, and PSA**. *IFCC-WorldLab/EuroMedLab*, May 15–19, 2011, Berlin, Germany.

Patents

- Hajrudin Efendic, Gerald Hohenbichler, Stephan M. Winkler, and Andreas Schrempf: **Verfahren zur Überwachung einer Industrieanlage**. 2010. *WO 2010/000836, PCT/EP2009/058406*