

# FH-Prof. PD DI Dr. Stephan Winkler

August 2020



## CURRENT POSITION

University of Applied Sciences Upper Austria, School for Informatics, Communications and Media  
Head of Department for Medical and Bioinformatics and Data Science and Engineering  
Head of Bioinformatics Research Group  
Member of Heuristic and Evolutionary Algorithms Laboratory

## PERSONAL DATA

Name: FH-Prof. PD DI Dr. Stephan Winkler  
Business address: FH OÖ (University of Applied Sciences Upper Austria), Hagenberg Campus  
Softwarepark 11, 4232 Hagenberg  
Date and place of birth: October 26th, 1980, Linz, Austria  
Nationality: Austrian  
Marital status: Married

## PROFESSIONAL CAREER

since 2019/09 Head of the Department for Medical and Bioinformatics and Data Science, University of Applied Sciences Upper Austria, Hagenberg  
2018/05 Venia docendi at Johannes Kepler University Linz for the field "Data based modeling" (computer science)  
Habilitation thesis: "Evolutionary Computation and Symbolic Regression in Scientific Modeling"  
2015/04 – 2015/05 Guest professor at Department for Applied Mathematics, Universidad de Alcalá de Henares, Madrid, Spain  
2014/04 – 2014/07 Visiting scholar at BEACON, an NSF Center for the Study of Evolution in Action at Michigan State University, East Lansing, MI.  
since 2011/02 Head of Bioinformatics Research Group, University of Applied Sciences Upper Austria, Hagenberg  
(<http://bioinformatics.fh-hagenberg.at>)  
since 2009/02 Professor at the Department for Medical and Bioinformatics, University of Applied Sciences Upper Austria, Hagenberg  
since 2006/10 Lecturer at University of Applied Sciences Upper Austria, Hagenberg Campus; courses in Software Engineering, Information Engineering and –Management, and Bioinformatics  
2006/02 – 2009/01 Research assistant at Research Center Hagenberg, University of Applied Sciences Upper Austria  
2006/02 – 2009/01 Research assistant, Translational Research Program project L284-N04 "GP-Based Techniques for the Design of Virtual Sensors", funded by the Austrian Science Fund (FWF)  
2005/03 – 2005/06 Lecturer at Johannes Kepler Universität; courses in Mechatronics  
2005/02 – 2006/03 Junior researcher at Linz Competence Center in Mechatronics (LCM)  
2004/10 – 2006/01 Research assistant at the Institute for Design and Control of Mechatronical Systems, Johannes Kepler Universität, Linz, Austria  
2003 – 2004 Tutor for computer science at Johannes Kepler Universität, Linz, Austria  
since 2003 Member of the Heuristic and Evolutionary Algorithms Laboratory (<http://heal.heuristiclab.com>)  
since 2002 Plugin developer for HeuristicLab (<http://dev.heuristiclab.com>)  
2000 - 2010 Programmer and IT counselor for Altenbetreuungsschule des Landes OÖ, Linz, Austria  
1999 Programmer for Programmierfabrik GmbH, Hagenberg, Austria

## EDUCATION, STUDIES

2004/10 – 2008/04 PhD studies in engineering sciences at Johannes Kepler University, Linz, Austria  
2008/04 Promotion; PhD thesis: "Evolutionary System Identification - Modern Concepts and Practical Applications"  
1999/10 – 2004/09 Studies in computer science at Johannes Kepler University, Linz, Austria  
2004/09 Graduation; diploma thesis: "Identifying Nonlinear Model Structures Using Genetic Programming"  
1990 – 1998 Secondary school, high school: Bischöfliches Gymnasium Kollegium Petrinum, Linz, Austria  
1985 – 1990 Elementary schools in Newark, Delaware, USA and Linz, Austria

## RESEARCH PROJECTS (EXCERPT)

### F&E FH OÖ

- 2020 - 2022 Research collaboration with lingohub GmbH: "Linguist: Translation Quality Analysis"; sponsored by FFG [project leader]
- 2020 Research collaboration with MAGNA Engineering Center Steyr: "Modeling of thermic networks" [project leader]
- 2020 Research collaboration with SalesSuckers OG: "Automated analysis of websites"; sponsored by FFG [project leader]
- 2020 - 2021 Research collaboration with KML Vision: "Optimization of image analysis and machine learning algorithms"; sponsored by FFG [project leader]
- 2020 - 2022 Research collaboration with PASO Solutions: "b-tastic" [senior researcher]
- 2018 – 2019 Research project "NGS assessment of donor reactive T cell repertoire" with AKH Wien, Nephrology [senior researcher]
- 2018 – 2019 Research project "Multimodal imaging and machine learning - TC-MIML"; sponsored by Center for Technical Innovation in Medicine (TIMed) of FH OÖ [deputy project leader]
- 2019 - 2020 Research project „Laser-Induced-Surface-Modification zur Erzeugung biokompatibler Mikrostrukturen“, sponsored by Center for Technical Innovation in Medicine (TIMed) of FH OÖ [deputy project leader]
- 2019 - 2021 Research project "KIMIKU" with hello again GmbH; sponsored by FFG [senior researcher]
- 2019 - 2022 Research project "LeukImmune" (Identification of crucial factors for the development and therapy of leukemia based on immunological data), PhD funding for Julia Vetter [project leader]
- 2019 - 2022 Research project "SymRegZeit" (Vektor-basierte Genetische Programmierung für Symbolische Regression und Klassifikation mit Zeitreihen), PhD funding for Philipp Fleck [project leader]
- 2018 – 2020 Collaborative PhD funding for bioinformatics; sponsored by Center for Technical Innovation in Medicine (TIMed) of FH OÖ [project leader]
- 2018 Research collaboration with TDE Thonhauser Data Engineering GmbH: "Modeling by Symbolic Regression" [project leader]
- 2018 Research collaboration with BAP Consult: „Identifikation of 3D objects in 2D scans“; sponsored by FFG [project leader]
- 2017 Research collaboration with OntoJob GmbH: "Automated Web-Crawling"; sponsored by FFG [project leader]
- 2017 - 2019 Research collaboration with Asoss GmbH: "Software based detection of 3D elements"; sponsored by Land OÖ (Easy2Research) and FFG [project leader]
- since 2017 Member of the Scientific Board of the Center for Technical Innovation in Medicine (TIMed) of FH OÖ
- since 2017 Research collaboration with Bergkräuter: "Reduction of Herb Contamination" within K-Center FFoQSI - Feed and Food Quality Safety and Innovation [project leader]
- since 2017 Research Project "LeiVMed Online": Leistungsvergleich Medizin, research collaboration with Oberösterreichische Gesundheitsholding GmbH (OÖG) [deputy project leader]
- 2016 – 2019 PHD-Programm II: PhD funding for Sebastian Dorl; sponsored by FH OÖ [deputy project leader]
- since 2015 Research collaboration with José Ignacio Hidalgo Pérez et al. at Universidad Complutense Madrid: Modeling of glucose concentrations in diabetes patients
- 2015 Research collaboration with Rafael Sendra at Universidad de Alcalá de Henares: Optimization of coefficients of curve parametrizations
- 2015 Research collaboration with Faschang Service & Management GmbH: "Detection of elements for the OMIS system"; sponsored by Land OÖ (Easy2Research) [project leader]
- 2014 – 2018 K-Project "HOPL": Heuristic Optimization in Production and Logistics; sponsored by FFG [senior researcher]
- 2014 – 2016 Basic research project "GlukoStar"; sponsored by FH OÖ [deputy project leader]
- 2014 – 2016 Basic research project "Immune Profiler"; sponsored by FH OÖ [senior researcher]
- 2014 – 2018 Research Project "TOMO3D": Bioinformatics research project in cooperation with Blutzentrale des RK OÖ and Olympus Austria, sponsored by the Austrian Research Funding Agency (FFG) [project leader]
- 2013 – 2015 Research Project "Transplant": Bioinformatics research project in cooperation with Blutzentrale des RK OÖ, sponsored by the European Union and the Upper Austrian Government within the Research Programme Regio13 [deputy project leader, research partner]
- 2013 – 2017 Research Project "SESAM": Bioinformatics research project in cooperation with IMP Vienna, sponsored by the Austrian Research Funding Agency (FWF) [deputy project leader, research partner]
- 2013 – 2016 Research Project "NanoDetect": Bioinformatics research project in cooperation with Blutzentrale des RK OÖ, Olympus Austria, and Trauma Care Consult, sponsored by the Austrian Research Funding Agency (FFG) [project leader]
- 2011 – 2013 Basic research project "MOdoPS": Model Based Design by Open Source; sponsored by FH OÖ [senior researcher]
- 2011 – 2013 Basic research project "DETECTOR +  $\mu$ -Prot": Design and Implementation of a Framework for Optimized Structure Analysis in Microscopy Images + Analysis of the Influence of Secondary Substances in Plants on Protein-Protein Interactions in Living Cells; sponsored by FH OÖ [project leader]
- 2011 – 2012 Research project "MS Amanda": Bioinformatics research project in cooperation with IMP Vienna [senior researcher]
- 2010 – 2011 Basic research project "Tschechow": Opinion Mining and Bioinformatical Information Retrieval; sponsored by FH OÖ [project leader]
- 2010 Cooperation with Borealis: "Data Based Modeling" [researcher]
- 2009 – 2013 Josef Ressel Centre for Heuristic Optimization "Heureka!" [researcher]
- 2008 Research collaboration with MAS Alzheimerhilfe Bad Ischl: "Identification of Influences and Relationships in Data of Patients Suffering from Alzheimer's Disease Using Genetic Programming"; FFG project [researcher]

- 2008 Research collaboration with Gunytronic: "Identification of Model Structures in Measurement Data"; TIM project [researcher]
- 2007 – 2008 Research collaboration with VA-S: "Using Genetic Programming in the Identification of Model Structures in Measurement Data" [researcher]
- 2006 Research collaboration with Hofer Powertrain: "Data Based Modeling" [researcher]
- 2006 – 2009 Research project "GP-Based Techniques for the Design of Virtual Sensors"; sponsored by FWF, joint execution by FH OÖ, JKU (DesReg), and LCM [researcher]

#### **JKU (DesReg) / LCM**

- 2005 – 2006 Cooperation with VA-I: "Pre-Assessment of Quality of Steel Products" [researcher]
- 2004 – 2005 Cooperation with VA-I: "Fault Detection and Isolation" [researcher]
- 2004 Cooperation with AVL: "Automatic Measurement and Plausibility Analysis" [researcher]

### **REVIEWING, PROGRAM COMMITTEES**

- 2020 Member of the organization committee of Genetic Programming Theory & Practice
- 2020 Reviewer of PhD theses for Universität für Bodenkultur Wien
- 2019 Reviewer of PhD theses for Universität Salzburg, Naturwissenschaftliche Fakultät
- since 2017 Reviewer for Elsevier Applied Soft Computing
- since 2014 Reviewer for the Workshop on Evolutionary Computation Software Systems at the Genetic and Evolutionary Computation Conference (GECCO/EvoSoft)
- since 2014 Reviewer for Springer Soft Computing (SOCO)
- 2014 Reviewer for Springer Genetic Programming and Evolvable Machines (GPEM)
- since 2012 Reviewer for the International Journal of Simulation and Process Modelling
- since 2012 Program Committee Member of the International Asia Pacific Conference on Computer Aided System Theory (APCAST)
- 2011 Reviewer for the Foundations of Genetic Algorithms XI (FOGA 2011)
- 2010 Reviewer for 14th IEEE International Conference on Intelligent Engineering Systems (INES 2010)
- since 2010 Reviewer of PhD theses for National University of Computer & Emerging Sciences Islamabad, Pakistan
- since 2009 Reviewer for IEEE Transactions on Neural Networks
- since 2009 Reviewer for IEEE Transactions on Evolutionary Computation
- 2009 Reviewer for the International Symposium on Logistics and Industrial Informatics (LINDI 2009)
- since 2009 Reviewer for the Workshop on Parallel Evolutionary Systems at the Genetic and Evolutionary Computation Conference (GECCO/PES)
- since 2009 Reviewer and program committee member for the International Conference on Computer Aided Systems Theory (EuroCAST)
- since 2008 Reviewer for the Workshop on Soft Computing and Modelling & Simulation at the European Modeling and Simulation Symposium (EMMS)
- since 2006 Reviewer for the Workshop on Medical Applications at the Genetic and Evolutionary Computation Conference (GECCO/MedGEC)
- 2006 Reviewer for the Workshop on Nature Inspired Distributed Computing (NIDISC'06)
- since 2005 Reviewer for the International Mediterranean Modeling Multiconference (I3M)

### **AWARDS**

- 2015/12 Researcher Award 2015 of University of Applied Sciences Upper Austria
- 2011/09 Best Teacher Award (Second Rank) of the Studies "Medical and Bioinformatics", "Biomedical Informatics" and "Bioinformatics" at Upper Austria of Applied Sciences, Campus Hagenberg
- 2011/09 Best Paper Award of the 8<sup>th</sup> International Mediterranean and Latin American Modeling Multiconference (IMMM 2011) conference for the contribution "On the use of estimated tumor marker classifications in tumor diagnosis prediction" in the 23<sup>rd</sup> European Modeling & Simulation Symposium (EMSS 2011)
- 2010/02 Best Teacher Award (First Rank) of the Studies "Medical and Bioinformatics", "Biomedical Informatics" and "Bioinformatics" at Upper Austria of Applied Sciences, Campus Hagenberg
- 2008/12 Junior Researcher Award 2008 of University of Applied Sciences Upper Austria
- 2005/07 Best Paper Award of WMSCI 2005 conference for the contribution "Solving Multiclass Classification Problems by Genetic Programming" in the session "Management Information Systems"
- 2004/04 Best Paper Award of EMCSR 2004 conference for the contribution "Identifying Nonlinear Model Structures Using Genetic Programming Techniques" in the session "Theory and Applications of Artificial Intelligence"
- 2002, 2003 Scholarships of the Technical Faculty at the Johannes Kepler University for excellent merits in studies in the years 2002 and 2003