

Curriculum Vitae – Prof. Dr. Thomas Bartz-Beielstein

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URL: <https://www.th-koeln.de/personen/thomas.bartz-beielstein/>
Date of birth: 8. Mai 1966
Place of birth: Iserlohn, Germany
Marital status: married since 2000, two children
Citizenship: German

Education

1976 – 1985 Märkisches Gymnasium Iserlohn: University-entrance diploma
1985 – 1987 Marien Hospital Wesel: Civilian service
1987 – 1991 Institute Waldorf Education Witten-Annen: Diploma Education
1989 – 1997 Technical University Dortmund: Diploma Mathematics
2000 – 2005 University Dortmund: Doctoral studies
Dissertation: *New Experimentalism Applied to Evolutionary Computation*

Employment History

1994 – 2000 Blote Vogel School, Witten:
Teacher of Mathematics and Computer Science

2000 – 2003 NuTech Solutions, Inc., Dortmund: Consultant.
Elevator Group Control (Simulation and Optimization)

2000 – 2004 Technical University Dortmund, Collaborative Research Center:
Deputy leader. *Design and Management of Complex Technical Processes and Systems by Means of Computational Intelligence Methods*

2000 – 2006 Technical University Dortmund, Prof. Dr.-Ing. H.-P. Schwefel:
Research assistant

since 2006 Cologne University of Applied Sciences,
Faculty Computer Science and Engineering Sciences:
Professor (W2) *Applied Mathematics*

Professional Activities

since 2007	<i>Student Affairs Manager. Faculty Computer Science and Engineering Science. TH Köln</i>
since 2007	<i>Research Affairs Committee. TH Köln (Member)</i>
since 2008	<i>Studienfonds Oberberg Foundation (Representative)</i>
since 2008	<i>Research Center (Forschungsschwerpunkt) Computational Services in Automation (Member)</i>
since 2010	<i>Research Group (Forschungsstelle) Computational Intelligence, Optimization & Data Mining (Head)</i>
since 2012	<i>Research Center (Forschungsschwerpunkt) Computational Intelligence plus (Speaker)</i>
since 2013	<i>NRW Innovation Alliance (Innovation Partner)</i>
since 2013	<i>Research Institute Sustainable Technologies and Computational Services for Environmental and Production Processes (Associated Member)</i>
2016	<i>Jury Lehrpreis der TH Köln (Member)</i>
since 2016	<i>Ständige Kommission zur Förderung des wissenschaftlichen Nachwuchses der TH Köln (Member)</i>
2016	<i>Fachgruppe Digitalisierung in Wirtschaft und Gesellschaft des Graduierteninstituts NRW (Founding Member)</i>
2016	<i>Fakultätsrat der Fakultät für Informatik und Ingenieurwissenschaften der TH Köln (Member)</i>

Research Projects

- KOARCH – Kognitive Architektur für Cyber-physische Produktionssysteme und Industrie 4.0
 - Duration: 2018 – 2021
 - Third-party funds: €1.500.000,00 (Portion: €500.000,00)
- UTOPIAE – Uncertainty Treatment and Optimisation in Aerospace Engineering
 - Duration: 2017 – 2021
 - Third-party funds: €3.876.854,00 (Portion: €249.216,00)
- OWOS – Open Water Open Source
 - Duration: 2017 – 2020
 - Third-party funds: €291.219,12
- SYNERGY – Synergy for Smart Multi-Objective Optimization
 - Duration: 1.2.2016 – 31.1.2019
 - Third-party funds: €1.016.890,00 (Portion: €133.206,05)
- IMProvT – Intelligente Messverfahren zur Prozessoptimierung von Trinkwasserbereitstellung und Verteilung
 - Duration: 1.12.2015 – 30.11.2018

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- Third-party funds: €590.445,00 (Portion: €236.178,00)
 - ISAFAN: Intelligente Schadenvorhersage an Faserverbundstoff-Bauteilen in industriellen Anwendungen
 - Duration: 1.1.2014 – 31.12.2017
 - Third-party funds: €238.890,00 (Portion: €59.722,50)
 - SO2-Sensor: Entwicklung multivariater Modellierung und adaptive Online Optimierung für das In-situ Messsystem mit einer SO2-Sonde
 - Duration: 1.1.2015 – 31.12.2016
 - Third-party funds: €168.573,00 (Portion: €168.573,00)
 - MCIOP – Mehrkriterielle CI-basierte Optimierungsverfahren für den industriellen Einsatz
 - Duration: 1.8.2011 – 30.6.2015
 - Third-party funds: €285.674,40 (Portion: €285.674,40)
 - COe-Sensor — Entwicklung von stabilen und querempfindlichkeitsfreien COe-sensitiven Materialien für Rauchgassensoren
 - Duration: 1.7.2013 – 30.06.2015
 - Third-party funds: €173.402,00 (Portion: €173.402,00)
 - PER-OPTI – Optimierung der Prozessführung basierend auf der automatischen Performancebewertung in modernen Walzwerken
 - Duration: 1.5.2012 – 30.4.2015
 - Third-party funds: €45.000,00 (Portion: €22.500,00)
 - CIMO: CI-basierte mehrkriterielle Optimierungsverfahren für Anwendungen in der Industrie
 - Duration: 1.11.2011 – 31.10.2014
 - Third-party funds: €281.453,70 (Portion: €281.453,70)
 - FIWA – Methoden der Computational Intelligence für Vorhersagemodelle in der Finanz- und Wasserwirtschaft
 - Duration: 1.6.2009 – 31.11.2012
 - Third-party funds: €258.424,00 (Portion: €258.424,00)

Lectures

- Applied Mathematics I + II
- Computational Intelligence
- Advanced Process Control and Optimization
- Data-Driven Modeling and Simulation of Technical Processes
- Modeling, Simulation, and Optimisation (Oberseminar)

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- Data Mining
 - Operations Research

Research Interests

- Computational intelligence, evolutionary algorithms
- Simulation, optimization and statistical analysis of complex real-world problems
- Methods for teaching mathematics and computer science
- Design and analysis of computer experiments
- Statistical quality control, six sigma

Reviewer, Editorship

- Area Editor (Real-World Applications) of the *Handbook of Computational Intelligence*
- Guest Editor *Special Issue on Automated Design and Assessment of Heuristic Search Methods* Evolutionary Computation Journal, MIT Press (with Gabriela Ochoa, University of Nottingham, Mike Preuss, TU Dortmund and Marc Schoenauer, INRIA Saclay – Île-de-France)
- Editorship *Cologne Open Science*. Serial CIPlus
- Reviewer for several scientific institutions, e.g.,
 - European Commission (H2020)
 - Dutch National Science Foundation
 - Natural Sciences and Engineering Research Council of Canada
 - Academy of Finland
 - Research Foundation Flanders
 - Research Council KU Leuven
 - Bundesministerium für Bildung und Forschung
 - Baden-Württembergische Ministerium für Wissenschaft, Forschung und Kunst
- External Reviewer for promotion to Associate Professor (Department of Mathematics and Computer Science at Western Kentucky University)
- TU Dortmund University: Co-supervisor of Ph.D. Theses
- Member of Ph.D. Theses Committees
 - Babes-Bolyai University: Ruxandra Stoean (2008). Evolutionary Computation. Application to Data Analysis and Machine Learning
 - Babes-Bolyai University: Catalin Stoean (2008). New Evolutionary Techniques in Multi-modal Optimization
 - Vrije Universiteit Amsterdam: Volker Nannen (2009). Evolutionary Agent-Based Policy Analysis in Dynamic Environments

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- Universiteit Leiden: Ron Breukelaar (2010). Interaction and Evolutionary Algorithms
 - Vrije Universiteit Amsterdam: Selmar Smit (2012). Parameter Tuning and Scientific Testing in Evolutionary Algorithms
 - Warwick Business School, University of Warwick: Jawal Elomari (2013). Efficient Learning Methods to Tune Algorithm Parameters
 - Josef Stefan International Postgraduate School, Ljubljana: Tea Tusar (2014). Visualizing Solution Sets in Multiobjective Optimization
 - TU Dortmund University: Oliver Flasch (2015). A Modular Genetic Programming System.
 - Universiteit Gent: Prashant Singh (2016). Design of Experiments for Model-based Optimization.
 - Computational Intelligence Group, Vrije Universiteit Amsterdam: Giorgos Karafotias (2016). Parameter Control for Evolutionary Algorithms
 - University of Ioannina: Vassileios Tatsis. Parallel Computational Optimization Algorithms and Modeling (Ph.D. Thesis under work)

 - Member of Licentiate Thesis Committee
 - Mid Sweden University: Felix Dobsław (2011). Automatic Instance-based Tailoring of Parameter Settings for Metaheuristics

 - Reviewer for leading journals in the field of Computational Intelligence, Optimization and Simulation, e.g.:
 - Advances in Complex Systems
 - Annals of the University of Craiova - Mathematics and Computer Science Series
 - Applied Soft Computing
 - Computers & Operations Research
 - Engineering with Computers
 - Evolutionary Computation Journal
 - ICS News (INFORMS Computing Society)
 - International Journal of Production Research
 - IEEE Transactions on Evolutionary Computation
 - Journal of Computer Science and Technology
 - Journal of Process Mechanical Engineering
 - Journal of Heuristics
 - Natural Computing (NACO)
 - Optimization and Engineering
 - Proceedings of the Institution of Mechanical Engineers – Part E
 - Soft Computing
 - Swarm Intelligence
 - Theoretical Computer Science
 - Transactions on Evolutionary Computation (TEVC)
 - Transactions on Systems, Man, and Cybernetics – Part B

Membership in Committees

- Program Chair 13th International Conference on Parallel Problem Solving from Nature (2014)
- Event Chair Evolutionary Computation in Practice Track at GECCO (since 2008)
- Organisation GECCO Industrial Challenge (since 2011)
- Program Chair 4th International Workshop on Hybrid Metaheuristics (2007)
- Membership in program committees of the leading conferences in the field of computational intelligence, e.g.,
 - Ants Colony Optimization and Swarm Intelligence (ANTS) 2008
 - Congress on Evolutionary Computation (IEEE CEC) 2003-2016
 - Evolutionary Computation in Combinatorial Optimisation (EvoCOP) 2009-2018
 - Evolutionary Algorithms and Meta-heuristics in Stochastic and Dynamic Environments (EvoSTOC) 2009
 - Genetic and Evolutionary Computation Conference (GECCO) 2004-2018
 - German Workshop on Artificial Life (GWAL) 2008
 - Hybrid Intelligent Systems Conference (HIS) 2008
 - International Conference on Evolutionary Computation (ICEC) 2010
 - International Conference on Advanced Computational Intelligence (ICACI) 2018
 - Parallel Problem Solving from Nature (PPSN) 2008-2014
 - Stochastic Local Search (SLS) 2009-2011
 - Studierendenkonferenz Informatik (SKILL) 2015-2016
- Member *Association for Computing Machinery* (ACM) and Member of the ACM Special Interest Group *Genetic and Evolutionary Computation*
- Member *Fachausschuss Computational Intelligence, VDI/VDE-Gesellschaft für Mess- und Automatisierungstechnik*
- Member Advisory Board of the *Handbook of Natural Computing*
- Area Editor (Real-World Applications) of the *Springer Handbook of Computational Intelligence*
- Member *Lenkungsausschuss Dokumenten- und Publikationsservice für wissenschaftliche Publikationen der TH Köln*
- Member *EU/ME working group on Metaheuristics*
- Member *International Society on Multiple Criteria Decision Making*
- Member *Task Force on Collaborative Learning and Optimization of IEEE Computational Intelligence Society*

Thomas Ratz - Beichtstuhl

Gummersbach, December 2017