



## Biography

I received my Bachelor in Computer Science in 2011 and my Masters degree in 2013, both at the Leiden Institute of Advanced Computer Science (LIACS), Leiden University. In 2012, I founded a software company, Van Stein & Groentjes VOF, together with Tom Groentjes, which turned into a B.V. in 2014, with the hiring of our first employee. At the same time, I continued in academia by gaining my Ph.D. degree in 2018, doing a PostDoc in the CIMPLO project and currently I am an assistant professor in the Natural Computing group at LIACS. My research interests are focused on eXplainable Artificial Intelligence (XAI) in the context of optimization and time-series data with industrial applications such as predictive maintenance and schedule optimization. Next to research, I am active at the University as; Manager of the Applied Data Science Lab, member of the Institute Council, teacher of the bi-weekly Master Class and the Data Science course, supervisor of 5 Ph.D. students, several Bsc and Msc students per semester and as technical support for a number of computing clusters. My experience from my entrepreneurial and software development activities, together with my research, collaborations, and management activities at LIACS, define who I am as a professional.

## Dr. Niki van Stein

(Formerly Bas van Stein)

- ▶ Born 05-11-1989
- ▶ The Netherlands
- ▶ Married

## Skills

<b>Scientific Research</b>	8+ Years
<b>Scientific Programming</b>	8+ yrs.
<b>Management</b>	7+ yrs.
<b>Teaching</b>	7+ yrs.
<b>Project management</b>	6+ yrs.
<b>Grant writing</b>	4+ yrs.

## Languages

<b>Dutch</b>	Native
<b>English</b>	Fluent
<b>Greek</b>	Basic

## Work experience

### Assistant professor | Manager ADSL

01/2021 - today

Leiden Institute of Advanced Computer Science  
University of Leiden

Research, education, supervision, and management as part of the Natural Computing group and LIACS as a whole. Research in automated algorithm design, algorithm analysis, explainable AI, and predictive maintenance.

### PostDoc | Manager ADSL

05/2018 - 01/2021

Leiden Institute of Advanced Computer Science  
University of Leiden

Post-doctoral research in automated neural network design and architecture search, explainable AI and predictive maintenance, manager of the Applied Data Science Lab.

### Shareholder – Emerald-IT

05/2022 - today

Emerald-IT - Web and Software Solutions

Shareholder (6%) and management advisor.

### CTO – Emerald-IT

01/2012 - 05/2022

Emerald-IT - Web and Software Solutions

CTO and co-owner (50%). Management of 6 FTE personnel, lead developer of commercial projects, R&D.

### CTO

07/2017 - today

Smartnotation B.V.

Software development and technical manager of the Smartnotation platform.

## Research Areas

### Explainable AI

### Automatic Optimization Algorithm Configuration

### Surrogate Assisted Op- timization

### Analysis of Algorithms

### NAS / Deep-learning

### Ph.D. candidate

Leiden Institute of Advanced Computer Science  
University of Leiden

05/2014 - 05/2018

Research of Data-driven modeling and optimization of industrial processes (PROMIMOOC project). Assisting the courses MasterClass, Theory of Concurrency, Advances in Data Mining and Neural Networks.

### Guest Teacher

Leiden Institute of Advanced Computer Science  
University of Leiden

09/2013 - 05/2014

Teaching the courses Theory of Concurrency and Software Engineering in 2013; Biomodeling and Petri-nets and Linear Algebra in 2014.

### Student assistant and study ambassador

Leiden Institute of Advanced Computer Science  
University of Leiden

09/2010 - 09/2013

Assisting with several courses and giving presentations to secondary school children to promote Computer Science.

## Scientific activities

My scientific activities revolve around the topic of explainable artificial intelligence (XAI) for optimization and machine learning. To develop novel algorithms that automatically analyze and configure complex algorithms and models with the goal of better understanding, learning and finally improving the state-of-the-art. XAI is required to not only increase trust in algorithms and make them applicable in real-world scenarios but also in order to debug and understand these algorithms and to improve them.

## Awards

- *Learning the Characteristics of Engineering Optimization Problems with Applications in Automotive Crash*[10]  
Best paper award at GECCO 2022 (Real World Application track)
- *BBOB Instance Analysis: Landscape Properties and Algorithm Performance across Problem Instances*[11]  
Outstanding Student nomination EvoStar 2023
- *A framework for evaluating meta-models for simulation-based optimisation* [23]  
Best paper award at the IEEE Symposium Series on Computational Intelligence 2016

## Research management

- *Part of the MT of the Natural Computing Group* 2022 – now  
With Thomas Bäck as group leader
- *Project leader of the NWO XAIPre project* 2022 – now  
In collaboration with Thomas Bäck, Partners: Heerema Marine Contractors, Hanze Hogeschool Groningen. Positions: 1 PhD, 1 PostDoc, 1 scientific programmer

# Education

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**05/2014 - 05/2018**

## Computer Science (PhD.)

University of Leiden

*Machine Learning ▪ Optimization*  
Dissertation: „Data Driven Modeling & Optimization of Industrial Processes“.

**09/2011 - 08/2013**

## Computer Science (M.Sc.)

University of Leiden

Master's thesis: „A Mobile Smart Care Platform: Home Spirometry by using the Smartphone Microphone“.

**09/2008 - 08/2011**

## Informatica (B.Sc.)

University of Leiden

Bachelor's thesis: „The Beginning of a Theory for Set-nets“.

**09/2002 - 06/2008**

## VWO

Rijnlands Lyceum Sassenheim

*NT profile (technical)*.

### Invited talks

- *Neural Architecture Search vs Black Box Optimization* 2021  
Invited talk at BMW Headquarters, Germany
- *Automated Deep Learning* 2020  
Invited talk at SAILS (online)
- *Deep Learning, A broad introduction* 2019  
Invited talk at the ECOLE summer school
- *Deep Steel: Optimizing networks to discover defects on steel surface* 2018  
Invited talk at the ECOLE workshop
- *From Data to Knowledge to Optimization* 2017  
Invited talk at the PhD Colloquium, Leiden
- *Fuzzy Clustering for Optimally Weighted Cluster Kriging* 2016  
Invited talk at the PhD Seminar, LIACS

## Education in a research environment

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For excellent research, we need excellent students, and to get excellent students we need excellent education. It is my pleasure to contribute to this goal.

I have 12 years of teaching experience, 7 of which are as a (PhD)student assistant for a wide variety of courses. 1 year as a guest lecturer and 4 years as a teacher of the bi-weekly Master Class and the Data Science and Data Science and Process Modeling course (last 2 years). As a guest lecturer, I have given the courses Theory of Concurrency, Software Engineering, Biomodeling and Petri-nets and Linear Algebra.

### Data Science

Third year Bsc course, 120+ students

**2022 - now**

### Data Science and Process Modeling

Third year Bsc course, 20+ students

**2022 - 2023**

### Master Class

Second year Msc course, 100+ students

**2016 - now**

Thesis help, guest lectures, soft skills, preparation for job market

## Entrepreneurial overview

- ▶ Emerald-IT - 2012 – now
- ▶ Smartnotation B.V. - 2017 – now
- ▶ Culture Match B.V. - 2017 – 2019
- ▶ SALPAA B.V. - 2022 – 2023

## Entrepreneurial activities

During my Master, I have co-founded Van Stein & Groentjes, a custom software solutions company. In 2014 the company changed to a B.V., with the hiring of our first employee. The company has grown steadily ever since and currently has 8 FTE. In 2021 the name changed to Emerald-IT, as I was becoming more focused on my academic career and taking a step back from managing Emerald-IT. Apart from Emerald-IT, I have co-founded 3 other companies, mostly related to specific software applications. Of these companies only Smartnotation B.V. is still active. On each of these endeavors, I have learned a lot about HR, customer relations, project management, software development processes, software tools, programming languages (I can program fluently at production-level in 6 programming languages), networking, and hardware. All those skills enable me to perform my work at the University more efficiently, to support colleagues with software development and server maintenance, to host university websites in a matter of hours, and most importantly to grow LIACS' network of companies that are willing to co-invest in grant applications and ADSL projects.

In January 2023 I stopped as a CTO of Emerald-IT and I am now only advising the management. While I learned a great deal from setting up these companies, I realized a clear focus on research and my academic career is what I wanted for the future, as such I increased my appointment at LIACS to 0.95 FTE in January 2023.

## Funding overview

- ⑨ **Total secured: €1.594.000,-**
- ▶ for LIACS: €1.348.000,-
- ▶ as PI: €869.000,-
- ▶ as ADSL manager: €275.000,-

## Funding acquisition

As manager of the Applied Data Science Lab, I have secured €275.000,- euros on short-term collaborations with industry and with writing grant proposals I have secured €1.319.000,- on research grants, of which €1.073.000,- for LIACS. I contributed to the following grant proposals, either as co-applicant or as principal investigator (PI):

- “*Artificial Intelligence for a Sustainable Future*” 2019  
Co-applicant in the NWO Science PPP Fund 2019, with Thomas Bäck as PI, Not granted
- “*Evolutionary Intelligence*” 2019  
Co-applicant in the NWO Perspectief 2019 call, in collaboration with TU Delft, UU, CWI, VU, Not granted
- “*Machine learning to improve lens design*” 2021  
Co-applicant in the Holland High Tech 2021 call, in collaboration with ASML, **Granted**, 475.000 Euro budget (100% for LIACS).
- “*XAIPre: Explainable AI for Predictive Maintenance*” 2021  
PI<sup>1</sup> in the NWO Smart Industry 2021 call, in collaboration with Heerema Marine Contractors, Hogeschool Groningen, **Granted**, 795.454 Euro budget (549.000 Euro for LIACS).
- “*Evolutionary Intelligence*” 2021  
Co-applicant in the NWO Perspectief 2021 call, in collaboration with TU Delft, UU, CWI, VU, Not granted (Third round)
- “*Artificial intelligence for optical design*” 2022  
Co-applicant in the NWO Emerging Key Enabling Technologies 2022 call, in collaboration with ASML and Signify, Not granted
- “*Data and AI-Assisted Predictions to Enhance Maintenance Decisions*” 2022  
Co-applicant in the Horizon CL4 digital emerging 2022 call, in collaboration with Aristotelio Thessaloniki, Hogeschool van Amsterdam, Finning UK, Mirco Turbine Technology BV, Prisma Electronics, Rina Consulting, Epcor, Pratt and Whitney, Research Institute Sweden, Not granted
- “*CIMPLO*” 2022  
PI in the NWO Take-off Fase 1 2022 call, CIMPLO Market Readiness study, **Granted**, 49k for LIACS.
- “*ShockingMobility: instilling resilient and sustainable mobility by disruptive interventions and policies*” 2023  
Co-applicant in the NWO Zwaartekracht 2023 call, in collaboration with prof. dr. ir. S.P. Hoogendoorn et al., In review (Total budget of 25 Million, 6.4M for LIACS).
- “*CC Rider: Computing Continuum - Resilient Intelligence on Data at Extreme Rates*” 2023  
Co-applicant in the Horizon CL4-DATA-01 2023 call, in collaboration with Yannis Theodoridis et al., In review (Total budget of 5 Million, 300k for LIACS).
- “*GoLess: Generative Optimal Low-Emission Ship deSigns*” 2023  
PI in the NWO Open Technologies 2023 call, in collaboration with C-Job. In review (Total budget of 780k, 100% for LIACS).

## External profiles

-  nikivanstein.nl
-  scopus.com
-  orcid.org
-  github.com/Basvanstein

## Open source contributions

I am a supporter of Open Science and therefore do not only publish the code to make each paper reproducible, but I also publish well documented, well written, tested, ready to use Python packages. These packages are maintained on Github and the Python package index (pypi).

- Package to learn optimization landscape features from Design of Experiments using Variational Auto-Encoders.  
<https://pypi.org/project/doe2vec/>
- Toolbox for Detecting Structural Bias in optimization heuristics.  
<https://pypi.org/project/struct-bias/>
- Mixed integer, Parallel - Efficient Global Optimization package  
<https://pypi.org/project/mipego/>
- Optimally Weighted Cluster Kriging, machine learning algorithm in Sci-kit learn codestyle.  
<https://pypi.org/project/DWCK/>
- Parallel bayesian optimization with GPU support.  
<https://pypi.org/project/ParallelBayesOpt/>

See for more open-source projects:

-  github.com/Basvanstein

## Community contributions

### Member of the Institute Council

01/2022 - now

LIACS, Leiden University

### First Responder

01/2021 - now

BHV, Leiden University

### Manager Applied Data Science Lab

01/2018 - now

LIACS, Leiden University

Acquisition and management of 10 short-term projects, totaling €275.000,-

### Hiring committee member

06/2023 - 08/2023

LIACS, Leiden University

For hiring a new Assistant Professor at LIACS.

### Hiring committee member

08/2022 - 09/2022

LIACS, Leiden University

For hiring a new person for the Project Office at LIACS.

**PhD Defense Committees**

- Thiago Rios, Co-promoter, 2022
- Marios Kefalas, 2022
- Martina Friese, 2020

**Conference organisation****Conference Chair**

International Conference of Evolutionary Computation,  
Theory and Applications (ECTA)

**2022, 2023****Publicity Chair**

Parallel Problem Solving from Nature (PPSN)

**2020****Tutorial organisation**

Tutorial on Structural BIAS 2023  
in the International Conference of Evolutionary Computation, Theory and Applications (ECTA)

**Workshop organisation**

Workshop on Analysing algorithmic behaviour of optimisation heuristics 2023  
in the Genetic and Evolutionary Computation Conference (GECCO)

**Editorial and reviewing tasks**

Program Committee member of the following conferences:

- Genetic and Evolutionary Computation Conference (GECCO)
- International Conference on Machine Learning, Optimization, and Data Science (LOD)
- Parallel Problem Solving from Nature (PPSN)
- World Congress of Computation Intelligence (WCCI)
- Congress on Evolutionary Computation (CEC)
- Evolutionary Multi-Criterion Optimization (EMO)

Reviewer for the following journals:

- Journal of Information Science
- Swarm Intelligence
- Engineering Applications of AI
- Expert Systems with Applications
- Optic
- Swarm and Evolutionary Computation

## Supervision overview

- ▶ 1 graduated PhD student
- ▶ 5 active PhD students
- ▶ 27 Master Students
- ▶ 13 Bachelor Students

## Supervision

### PhD Candidates

- Kirill Antonov, Co-promotor, 2022
- Qi Huang, Co-promotor, 2022
- Fu-Xing Long, Co-promotor, 2021
- Alexander A. Zeiser, Co-promotor, 2020
- Roy de Winter, Co-promotor, 2020
- Thiago Rios, Co-promotor, 2018 – 2022

### Master Students

- Ziwei Zhang, second supervisor 2023
- Wei Chen, first supervisor 2023
- Zhe Deng, first supervisor 2023
- Unmukt Deswal, first supervisor 2023
- Lucan van Rooij, first supervisor 2023
- Akshay Ram Bhat, first supervisor 2022
- Youliang Luo, first supervisor 2022
- Olzhas Aldabergenov, first supervisor 2021
- Mick Voogt, first supervisor 2021
- Mei Chen, second supervisor 2021
- Joep Helmonds, first supervisor 2021
- Bartosh Piakowski, first supervisor, accepted paper 2021
- Wu Jichen, second supervisor 2020
- Kevin Noordover, first supervisor 2020
- Juan Rojo, first supervisor 2020
- Gideon Hanse, first supervisor, accepted paper 2020
- Ankita Parashar, second supervisor 2020
- Wilco Draijer, second supervisor 2019
- Muhammet Ozer, first supervisor 2019
- Lalithasushma Chakravadhanula, first supervisor 2019
- Alban Bastiaan, first supervisor 2019
- Roy de Winter, first supervisor, accepted paper 2019
- Mounir Hader, first supervisor 2018
- Guo Xin, first supervisor, accepted paper 2018
- Christiaan Lamers, first supervisor 2018
- Wilco Verhoeef, first supervisor 2017
- Pepijn van Heijningen, first supervisor, accepted paper 2016

## Interests

- ▶ Trumpet & Guitar
- ▶ Opera singing
- ▶ Fantasy writing
- ▶ Waterpolo
- ▶ Archery
- ▶ Board games

## Contact

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2411MW Bodegraven
- 📞 +31 653 2041 64
- ✉️ n.van.stein@liacs.leidenuniv.nl

## Bachelor Students

- |                                                |      |
|------------------------------------------------|------|
| ▪ Martijn Halsema, first supervisor            | 2023 |
| ▪ Efraim Lumonon, first supervisor             | 2022 |
| ▪ Efraim Lumonon, first supervisor             | 2021 |
| ▪ Luuk van den Nouweland, first supervisor     | 2021 |
| ▪ Koen Ponse, first supervisor, accepted paper | 2021 |
| ▪ Ankita Parashar, first supervisor            | 2020 |
| ▪ Shi Ting, first supervisor                   | 2018 |
| ▪ Sander Ronde, first supervisor               | 2017 |
| ▪ Joost Martens, first supervisor              | 2017 |
| ▪ Tim Visser, first supervisor                 | 2016 |
| ▪ Muhammet Ozer, first supervisor              | 2016 |
| ▪ Lars Hopman, first supervisor                | 2016 |
| ▪ Dico Duba, first supervisor                  | 2016 |

## References

The following people have approved to be contacted as reference:

- Dr. Fabio Caraffini, De Montfort University Leicester, fabio.caraffini@dmu.ac.uk, +44 (0)116 2078404
- Prof. Bernhard Sendhoff, Honda Research Institute and TU Darmstadt, bernhard.sendhoff@honda-ri.de / bs@honda-ri.de
- Prof. Sanaz Mostaghim, University of Magdeburg, sanaz.mostaghim@ovgu.de, +49 391 67 54986
- Dr. Carola Doer, Sorbonne Université, Carola.Doerr@lip6.fr, +33 (0)1 4427 7064
- Prof. Thomas Bäck, Leiden University, LIACS, t.h.w.baeck@liacs.leidenuniv.nl, +49 177 3295153

## Publications

See my Google Scholar profile for detailed and up-to-date information (h-index 14 at the time of writing).

Conference publications in computer science are peer-reviewed. As a result, publications in top conferences—which are highly selective—are typically considered as prestigious as publications in journals. In the field of Evolutionary Computation, most researchers consider FOGA, CEC, GECCO top-conferences, in Machine Learning top-conferences include ECML PKDD, ICVR, IJCNN and others. Following those are EvoStar, ECTA, LOD, PPSN, SSCI, IEEE BigData, and others, as good conferences.

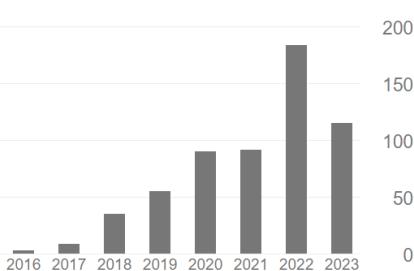
### Articles (peer-reviewed)

- [1] Thomas HW Bäck, Anna V Kononova, Bas van Stein, Hao Wang, Kirill A Antonov, Roman T Kalkreuth, Jacob de Nobel, Diederick Vermetten, Roy de Winter, and Furong Ye. Evolutionary algorithms for parameter optimization—thirty years later. *Evolutionary Computation*, 31(2):81–122, 2023.

# Publication overview

- ▶ 49 peer-reviewed papers
- ▶ 596 citations

Citations over time



- [2] Roy de Winter, Philip Bronkhorst, Bas van Stein, and Thomas Bäck. Constrained multi-objective optimization with a limited budget of function evaluations. *Memetic Computing*, 14(2):151–164, 2022.
- [3] Roy de Winter, Bas van Stein, and Thomas Bäck. Samo-cobra: A fast surrogate assisted constrained multi-objective optimization algorithm. In *Evolutionary Multi-Criterion Optimization: 11th International Conference, EMO 2021, Shenzhen, China, March 28–31, 2021, Proceedings 11*, pages 270–282. Springer International Publishing, 2021.
- [4] Roy de Winter, Bas van Stein, and Thomas Bäck. Multi-point acquisition function for constraint parallel efficient multi-objective optimization. In *Proceedings of the Genetic and Evolutionary Computation Conference*, pages 511–519, 2022.
- [5] Roy de Winter, Bas van Stein, Matthys Dijkman, and Thomas Bäck. Designing ships using constrained multi-objective efficient global optimization. In *Machine Learning, Optimization, and Data Science: 4th International Conference, LOD 2018, Volterra, Italy, September 13–16, 2018, Revised Selected Papers 4*, pages 191–203. Springer International Publishing, 2019.
- [6] Xin Guo, Bas van Stein, and Thomas Bäck. A new approach towards the combined algorithm selection and hyper-parameter optimization problem. In *2019 IEEE Symposium Series on Computational Intelligence (SSCI)*, pages 2042–2049. IEEE, 2019.
- [7] Gideon Hanse, Roy de Winter, Bas van Stein, and Thomas Bäck. Optimally weighted ensembles for efficient multi-objective optimization. In *International Conference on Machine Learning, Optimization, and Data Science. Springer*, pages 144–156, 2021.
- [8] Marios Kefalas, Juan de Santiago Rojo Jr, Asteris Apostolidis, Dirk Van Den Herik, Bas van Stein, and Thomas Bäck. Explainable artificial intelligence for exhaust gas temperature of turbofan engines. *Journal of Aerospace Information Systems*, 19(6):447–454, 2022.
- [9] Marios Kefalas, Bas van Stein, Mitra Baratchi, Asteris Apostolidis, and Thomas Bäck. An end-to-end pipeline for uncertainty quantification and remaining useful life estimation: An application on aircraft engines. In *PHM Society European Conference*, volume 7, pages 245–260, 2022.
- [10] Fu Xing Long, Bas van Stein, Moritz Frenzel, Peter Krause, Markus Gitterle, and Thomas Bäck. Learning the characteristics of engineering optimization problems with applications in automotive crash. In *Proceedings of the Genetic and Evolutionary Computation Conference*, pages 1227–1236, 2022.
- [11] Fu Xing Long, Diederick Vermetten, Bas van Stein, and Anna V Kononova. Bbob instance analysis: Landscape properties and algorithm performance across problem instances. In *International Conference on the Applications of Evolutionary Computation (Part of EvoStar)*, pages 380–395. Springer Nature Switzerland Cham, 2023.
- [12] Koen Ponse, Anna V Kononova, Maria Loleyt, and Bas Van Stein. Using machine learning to detect rotational symmetries from reflectional symmetries in 2d images. In *2021 IEEE Symposium Series on Computational Intelligence (SSCI)*, pages 01–08. IEEE, 2021.
- [13] Thiago Rios, Jiawen Kong, Bas van Stein, Thomas Bäck, Patricia Wollstadt, Bernhard Sendhoff, and Stefan Menzel. Back to meshes: Optimal simulation-ready mesh prototypes for autoencoder-based 3d car point clouds. In *2020 IEEE Symposium Series on Computational Intelligence (SSCI)*, pages 942–949. IEEE, 2020.
- [14] Thiago Rios, Bernhard Sendhoff, Stefan Menzel, Thomas Bäck, and Bas van Stein. On the efficiency of a point cloud autoencoder as a geometric representation for shape optimization. In *2019 IEEE Symposium Series on Computational Intelligence (SSCI)*, pages 791–798. IEEE, 2019.
- [15] Thiago Rios, Bas van Stein, Thomas Bäck, Bernhard Sendhoff, and Stefan Menzel. Multitask shape optimization using a 3-d point cloud autoencoder as unified representation. *IEEE Transactions on Evolutionary Computation*, 26(2):206–217, 2021.

- [16] Thiago Rios, Bas Van Stein, Thomas Bäck, Bernhard Sendhoff, and Stefan Menzel. Point2ffd: learning shape representations of simulation-ready 3d models for engineering design optimization. In *2021 International Conference on 3D Vision (3DV)*, pages 1024–1033. IEEE, 2021.
- [17] Thiago Rios, Bas van Stein, Stefan Menzel, Thomas Back, Bernhard Sendhoff, and Patricia Wollstadt. Feature visualization for 3d point cloud autoencoders. In *2020 International Joint Conference on Neural Networks (IJCNN)*, pages 1–9. IEEE, 2020.
- [18] Thiago Rios, Bas van Stein, Patricia Wollstadt, Thomas Bäck, Bernhard Sendhoff, and Stefan Menzel. Exploiting local geometric features in vehicle design optimization with 3d point cloud autoencoders. In *2021 IEEE Congress on Evolutionary Computation (CEC)*, pages 514–521. IEEE, 2021.
- [19] Thiago Rios, Patricia Wollstadt, Bas van Stein, Thomas Bäck, Zhao Xu, Bernhard Sendhoff, and Stefan Menzel. Scalability of learning tasks on 3d cae models using point cloud autoencoders. In *2019 IEEE Symposium Series on Computational Intelligence (SSCI)*, pages 1367–1374. IEEE, 2019.
- [20] Sneha Saha, Thiago Rios, Leandro L Minku, Bas Vas Stein, Patricia Wollstadt, Xin Yao, Thomas Back, Bernhard Sendhoff, and Stefan Menzel. Exploiting generative models for performance predictions of 3d car designs. In *2021 IEEE Symposium Series on Computational Intelligence (SSCI)*, pages 1–9. IEEE, 2021.
- [21] B van Stein. *Data driven modeling & optimization of industrial processes*. PhD thesis, Leiden University, 2018.
- [22] Thierry van der Spek, Bas van Stein, Marcel van der Holst, and Thomas Bäck. A multi-method simulation of a high-frequency bus line. In *2017 IEEE 20th International Conference on Intelligent Transportation Systems (ITSC)*, pages 1–6. IEEE, 2017.
- [23] Pepijn Van Heiningen, Bas van Stein, and Thomas Bäck. A framework for evaluating meta-models for simulation-based optimisation. In *2016 IEEE Symposium Series on Computational Intelligence (SSCI)*, pages 1–8. IEEE, 2016.
- [24] Sander van Rijn, Hao Wang, Bas van Stein, and Thomas Bäck. Algorithm configuration data mining for cma evolution strategies. In *Proceedings of the Genetic and Evolutionary Computation Conference*, pages 737–744, 2017.
- [25] Bas van Stein, Fabio Caraffini, and Anna V Kononova. Emergence of structural bias in differential evolution. In *Proceedings of the Genetic and Evolutionary Computation Conference Companion*, pages 1234–1242, 2021.
- [26] Bas Van Stein, Michael Emmerich, and Zhiwei Yang. Fitness landscape analysis of nk landscapes and vehicle routing problems by expanded barrier trees. In *EVOLVE-A Bridge between Probability, Set Oriented Numerics, and Evolutionary Computation IV: International Conference held at Leiden University, July 10-13, 2013*, pages 75–89. Springer International Publishing, 2013.
- [27] Bas Van Stein and Wojtek Kowalczyk. An incremental algorithm for repairing training sets with missing values. In *Information Processing and Management of Uncertainty in Knowledge-Based Systems: 16th International Conference, IPMU 2016, Eindhoven, The Netherlands, June 20-24, 2016, Proceedings, Part II 16*, pages 175–186. Springer International Publishing, 2016.
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- [29] Bas Van Stein and Elena Raponi. Gsareport: Easy to use global sensitivity reporting. *Journal of Open Source Software*, 7(78):4721, 2022.
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- [31] Bas Van Stein, Matthijs Van Leeuwen, and Thomas Bäck. Local subspace-based outlier detection using global neighbourhoods. In *2016 IEEE International Conference on Big Data (Big Data)*, pages 1136–1142. IEEE, 2016.
- [32] Bas Van Stein, Matthijs Van Leeuwen, Hao Wang, Stephan Purr, Sebastian Kreissl, Josef Meinhardt, and Thomas Bäck. Towards data driven process control in manufacturing car body parts. In *2016 International Conference on Computational Science and Computational Intelligence (CSCI)*, pages 459–462. IEEE, 2016.
- [33] Bas van Stein, Hao Wang, and Thomas Bäck. Automatic configuration of deep neural networks with parallel efficient global optimization. In *2019 International Joint Conference on Neural Networks (IJCNN)*, pages 1–7. IEEE, 2019.
- [34] Bas van Stein, Hao Wang, and Thomas Bäck. Neural network design: learning from neural architecture search. In *2020 IEEE Symposium Series on Computational Intelligence (SSCI)*, pages 1341–1349. IEEE, 2020.
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- [37] Bas van Stein, Hao Wang, Wojtek Kowalczyk, Michael Emmerich, and Thomas Bäck. Fuzzy clustering for optimally weighted cluster kriging. In *2016 IEEE international conference on fuzzy systems (FUZZ-IEEE)*, pages 939–945. IEEE, 2016.
- [38] Bas Van Stein, Hao Wang, Wojtek Kowalczyk, Michael Emmerich, and Thomas Bäck. Cluster-based kriging approximation algorithms for complexity reduction. *Applied Intelligence*, 50(3):778–791, 2020.
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