

Julian Blank

julianblank.com | blankjul@msu.edu | LinkedIn

EDUCATION

MICHIGAN STATE UNIVERSITY

East Lansing, MI, USA

PHD IN COMPUTER SCIENCE

08/2017 - 05/2022

GPA: 4.0

OTTO VON GUERICKE UNIVERSITY

Magdeburg, SA, Germany

MS IN COMPUTER SCIENCE

05/2014 - 05/2016

GPA: 1.0 (ECTS)

OTTO VON GUERICKE UNIVERSITY

Magdeburg, SA, Germany

BS IN BUSINESS INFORMATION SYSTEMS

10/2010 - 05/2014

GPA: 1.3 (ECTS)

AWARDS

OUTSTANDING GRADUATE STUDENT 02/2022

Awarded by the Computer Science Department at Michigan State University for outstanding research accomplishments.

ESD TECHCENTURY MAGAZINE 01/2022

Winner of the essay writing contest in 2021: The article will be published in the magazine (including my biography) and comes with a cash prize of 1,000\$.

BEST STUDENT PAPER

03/2021

Awarded at EMO'2021 conference for my research paper.

LINKS

Google Scholar:// [Julian Blank](#)

Github:// [julesy89](#)

Github:// [msu-coinlab](#)

LinkedIn:// [in/julian-blank](#)

Xing:// [Julian_Blank](#)

PROFESSIONAL EXPERIENCE

AMAZON | APPLIED SCIENTIST

Since 08/2022, Seattle, WA, USA

- Scientist in the Retail business focusing on improving product economics.
- Research in different work streams, such as the creation of regional customer experiences and product recommendations based on the customer's cart context.

MICHIGAN STATE UNIVERSITY | RESEARCHER

08/2017 - 05/2022, East Lansing, MI, USA

- Research and teaching assistant under the supervision of Professor Kalyanmoy Deb.
- Published 5 journal and 11 conference papers related to optimization.
- Solved real-world optimization problems originating from different industries such as automobile, civil engineering, and finance.
- Founder and leading developer of pymoo, a widely-used optimization toolkit.

FORD MOTOR COMPANY | RESEARCHER

08/2017 - 12/2018, East Lansing, MI, USA

- Leading researcher in a Ford Michigan State University Alliance Project established for automated exploration of the design space of engine water jacket.
- Improved the heat transfer coefficient by 88%. The new design is to be manufactured by Ford Motor Company for experimental validation.

COMPLEX GMBH & CO. KG | SOFTWARE DEVELOPER

12/2016 - 06/2017, Aschaffenburg, Bavaria, Germany

- Full-Stack Java Developer building a customized enterprise resource planning software.
- Developed product features using Java EE, Jira, CI, Docker following agile software development principles and a domain-driven software design.

Q-FIN | SOFTWARE DEVELOPER (INTERN)

11/2013 - 03/2014, Magdeburg, SA, Germany

- Python developer for automating regression testing during software migration.
- Developed a rule-finding algorithm with an improved rule quality requiring less than 10% of the original run time.

SAP UNIVERSITY COMPETENCE CENTER | RESEARCH ASSISTANT

06/2011 - 06/2013, Magdeburg, SA, Germany

- Developed and maintained educational material for SAP focusing on customer relationship management.
- Implemented a mobile app in ABAP and SAP MDK used to develop a new case study.

TEACHING EXPERIENCE

MICHIGAN STATE UNIVERSITY | GRADUATE TEACHING ASSISTANT

- *Fall 2020*: Discrete Structures (CSE260). Online due to Covid. Supervision of breakout rooms, editing of educational videos, exam generation, grading.
- *Fall 2019*: Fundamentals of Information Technology (CSE201). Basics of Python. Help rooms, grading, proctoring, projects, and exam preparation.
- *Spring 2019*: Computer Organization and Architecture (CSE320). Theory of circuits and coding in assembly language. Help rooms, grading, and proctoring.

OTTO VON GUERICKE UNIVERSITY | GRADUATE TEACHING ASSISTANT

- *Winter 2015*: Data Warehouse Architecture. Database models, replication strategies, and data analysis. Independent teaching of weekly tutorials accompanying the lecture.

SKILLS

PROGRAMMING

Python (7+ years)
Java (3+ years)
Matlab (2+ years)
SQL (2+ years)
C/C++ (1 year)
R (basics)
Javascript (basics)

FRAMEWORKS

NumPy • PyTorch •
TensorFlow • Angular
Django

OTHERS

Linux • Git • SVN • \LaTeX

LANGUAGES

German (native) • English (C1)
Spanish (A1) • Latin
Ancient Greek

INTERESTS

Traveling and Hiking • Volleyball
Basketball • Board Games
Swimming • Food & Cooking

ACTIVITIES

PROGRAM COMMITTEE

SSCI'21 • GECCO'21 • EMO'21 •
CEC'21 • EMO'19 • GECCO'19

REVIEWER

- IEEE Transactions on Evolutionary Computation
- IEEE Transactions on Cybernetics
- Swarm and Evolutionary Computation
- Soft Computing

COMPETITION ORGANIZER

of competitions at EMO 2019 and GECCO 2019 focusing on finding Pareto-optimal solutions for the Traveling Thief Problem.

MENTOR

for first-year students transitioning into higher education.

BUDDY PROGRAM

established to help international students settle down since cultural exchange comes with challenges.

FELLOWSHIPS / CERTIFICATES

DISSERTATION COMPLETION FELLOWSHIP 08/2021 - 12/2021

Awarded by the Graduate School at Michigan State University to expedite the completion of strong dissertations.

GRADUATE OFFICE FELLOWSHIP 05/2019 - 08/2019

from the Computer Science Department at Michigan State University to pursue graduate studies without associated teaching or research responsibilities.

TOEFL 01/2017

Total: 109/120 points • Reading 27 • Listening 28 • Speaking 27 • Writing 27

DEUTSCHLANDSTIPENDIUM 04/2014 - 04/2016

provided by the German government to support talented and high-achieving students at public and state-recognized universities.

GERMAN ACADEMIC EXCHANGE SCHOLARSHIP 08/2015 - 01/2016

awarded by DAAD (Deutscher Akademischer Austauschdienst) to study one semester abroad as a visiting scholar.

SAP TERP10 CERTIFICATION 03/2013

demonstrating knowledge of the integration in the SAP ERP "ecosystem", such as FI, CO, SD, MM, or IM.

TECHNICAL EXPERIENCE

PYMOO | PYTHON | DOCUMENTATION

- Developed a framework providing state-of-the-art single-, multi- and many-objective optimization algorithms and test problems.
- A toolbox providing features for multi-criteria decision-making and visualization.
- More than 900 stars and 150 forks on GitHub.
- More than 25,000 downloads each month (according to PyPI Stats).
- The corresponding paper has been cited more than 250 times to date.

PYSAMPLING | PYTHON | DOCUMENTATION

A toolkit providing methods to randomly or pseudo-randomly sample a point-set in an N -dimensional space.

PYDACEFIT | PYTHON | DOCUMENTATION

A re-implementation in Python of the popular DACEfit toolbox originally developed in MATLAB.

SMARTGROUPS | TYPESCRIPT

An application to intelligently assign individuals to a group based on each person's personal preferences with the goal to maximize the global satisfaction.

2048 | JAVA

A clone of the well-known 2048 game written in Java. The main focus was to implement and evaluate several game bots to maximize the final score.

ID3/C4.5 | PYTHON

Implementation of two popular decision tree algorithms, which are known to be a powerful tool to extract rules from data.

CHIMERGE | C++

An algorithm that aims to discretize a list of continuous values in a bottom-up manner with respect to a class label.

PUBLICATIONS

JOURNALS

- [J1] J. Blank and K. Deb. "Handling constrained multi-objective optimization problems with heterogeneous evaluation times: proof-of-principle results". In: *Memetic Computing* (Mar. 2022).
- [J2] J. Blank and K. Deb. "pymoo: Multi-objective Optimization in Python". In: *IEEE Access* 8 (2020), pp. 89497–89509.
- [J3] J. Blank, K. Deb, Y. Dhebar, S. Bandaru, and H. Seada. "Generating Well-Spaced Points on a Unit Simplex for Evolutionary Many-Objective Optimization". In: *IEEE Transactions on Evolutionary Computation* (2020), pp. 1–1.
- [J4] J. B. C. Chagas, J. Blank, M. Wagner, M. J. F. Souza, and K. Deb. "A non-dominated sorting based customized random-key genetic algorithm for the bi-objective traveling thief problem". In: *Journal of Heuristics* (Sept. 2020).
- [J5] A. Ahrari, J. Blank, K. Deb, and X. Li. "A proximity-based surrogate-assisted method for simulation-based design optimization of a cylinder head water jacket". In: *Engineering Optimization* (2020), pp. 1–19.

CONFERENCES

- [C1] J. Blank and K. Deb. "PSAF: A Probabilistic Surrogate-Assisted Framework for Single-Objective Optimization". In: *GECCO '21: Proceedings of the genetic and evolutionary computation conference companion*. place: New York, NY, USA. New York, NY, USA: ACM, 2021.
- [C2] J. Blank and K. Deb. "Constrained bi-objective surrogate-assisted optimization of problems with heterogeneous evaluation times: Expensive objectives and inexpensive constraints". In: *Evolutionary multi-criterion optimization*. Ed. by H. Ishibuchi et al. Springer International Publishing, 2021, pp. 257–269.
- [C3] J. Blank and K. Deb. "SOLVeR: A Blueprint for Collaborative Optimization in Practice". In: *International Multi-Conference on Complexity, Informatics and Cybernetics: IMCIC 2021*. 2021.
- [C4] N. Petrović, I. Al-Azzoni, and J. Blank. "Model-driven multi-objective optimization approach to 6G network planning". In: *2021 15th international conference on advanced technologies, systems and services in telecommunications (TELSIKS)*. 2021, pp. 223–226.
- [C5] B. Khoshoo, J. Blank, T. Pham, K. Deb, and S. Foster. "Optimized electric machine design solutions with efficient handling of constraints". In: *2021 IEEE symposium series on computational intelligence (SSCI)*. 2021, pp. 1–8.
- [C6] S. Sharma, J. Blank, K. Deb, and B. K. Panigrahi. "Ensembled crossover based evolutionary algorithm for single and multi-objective optimization". In: *2021 IEEE congress on evolutionary computation (CEC)*. 2021, pp. 1439–1446.
- [C7] J. Blank and K. Deb. "A Running Performance Metric and Termination Criterion for Evaluating Evolutionary Multi- and Many-objective Optimization Algorithms". In: *2020 IEEE Congress on Evolutionary Computation (CEC)*. 2020, pp. 1–8.
- [C8] P. Back et al. "Towards sustainable forest management strategies with MOEAs". In: *Proceedings of the 2020 genetic and evolutionary computation conference*. ACM, June 2020, pp. 1046–1054.
- [C9] J. Blank, K. Deb, and P. Roy. "Investigating the normalization procedure of NSGA-III". In: *Evolutionary multi-criterion optimization*. Ed. by K. Deb et al. place: Cham. Springer International Publishing, 2019, pp. 229–240.
- [C10] P. C. Roy, R. Hussein, J. Blank, and K. Deb. "Trust-region based multi-objective optimization for low budget scenarios". In: *Evolutionary multi-criterion optimization*. Ed. by K. Deb et al. place: Cham. Springer International Publishing, 2019, pp. 373–385.
- [C11] Y. Vesikar, K. Deb, and J. Blank. "Reference point based NSGA-III for preferred solutions". In: *2018 IEEE symposium series on computational intelligence (SSCI)*. Nov. 2018, pp. 1587–1594.
- [C12] J. Blank, K. Deb, and S. Mostaghim. "Solving the bi-objective traveling thief problem with multi-objective evolutionary algorithms". In: *Evolutionary multi-criterion optimization*. Ed. by H. Trautmann et al. place: Cham. Cham: Springer International Publishing, 2017, pp. 46–60.

For a complete list of publications please have a look here.