Curriculum Vitae

Personal Information

Name	**Warwicker, John Alasdair**
Nationality	British (UK)
Date of birth	25 September 1992
Address	Karl-Wilhelm-Strasse 18, 76131 Karlsruhe, Germany
Telephone	(+49) 176 6158 7140
Emails	johnwarwicker1@gmail.com
Google Scholar Profile	https://scholar.google.com/citations?user=SK6CxlMAAAAJ&hl=en

Work Experience

Dates	03/2023 – Present
Occupation or Position Held	Lecturer
Institution	Reutlingen University, Germany
Dates	06/2019 – 05/2025
Occupation or Position Held	Postdoctoral Research Associate
Institution	Karlsruhe Institute of Technology, Germany
Dates	11/2018 – 05/2019
Occupation or Position Held	Research Assistant
Institution	The University of Sheffield, UK
Project title	Time Complexity Analysis of Hyper-heuristics
Dates	03/2014 – 08/2014
Occupation or Position Held	Finance Intern
Institution	East and North Herts NHS Trust
Dates	08/2011 – 09/2011
Occupation or Position Held	Shadowing Team Members
Institution	National Centre for Social Research

Education and Qualifications

Dates	10/2015 – 10/2018
Institution	The University of Sheffield, UK
Degree	*PhD. in Computer Science* (Thesis Award: 16/09/2019)
Thesis title	On the Runtime Analysis of Selection Hyper-heuristics for Pseudo-Boolean Optimisation Problems
Dates	10/2011 – 07/2015
Institution	Loughborough University, UK
Study	*Mathematics*
Qualification awarded	*(MMath) Master of Mathematics Degree, First Class Honours*
Dates	09/2009 – 07/2011
Institution	The Priory School, Hitchin, UK
Qualification awarded	*A-Levels in Mathematics, Further Mathematics, Physics, Chemistry*

Teaching Experience

Dates	03/2023 – Present
Role	Lecturer
Courses Taught	(Master) Intelligent Systems and Processes
Course Language	English
Institution	Reutlingen University, Germany
Dates	04/2023 – 05/2025
Role	Lecture Assistant
Courses Taught	(Bachelor) Einführung in das OR I (Introduction to OR 1)
Course Language	German
Institution	Karlsruhe Institute of Technology, Germany
Dates	04/2020 – 05/2025
Role	Seminar Leader
Courses Taught	(Bachelor / Master) Trending Topics in Optimisation and Machine Learning, Stochastic Optimisation, Energy and Power Systems Optimisation
Course Language	English
Institution	Karlsruhe Institute of Technology, Germany
Dates	02/2016 – 05/2018
Roles	Seminar Assistant
Courses Taught	(Bachelor) Algorithms and Data Structures, Foundations of Computer Science, Modelling and Simulation of Natural Systems, Devices and Networks
Course Language	English
Institution	The University of Sheffield, UK

Supervision

Dates	10/2023 – Present
Role	Co-Supervisor
Academic Level	PhD Student
Project Title	Theoretical and Empirical Analysis of Matheuristics
Dates	01/2021 – 08/2021; 10/2023 – 04/2024; 02/2024 – 08/2024; 08/2024 – 02/2025
Academic Level	Master's Student (Thesis Supervisor)
Dates	06/2022 – 11/2022; 09/2024 – 03/2025; 04/2025 – Present
Academic Level	Bachelor's Student (Thesis Supervisor)
Dates	05/2022 – 12/2022; 09/2024 – 05/2025
Academic Level	Working Student

Editorial Work

2024 Andreas Ott, John Alasdair Warwicker and Wolfgang Reichel (Eds.).
Applications of Mathematics in Sciences, Engineering, and Economics - Proceedings of the MathSEE Symposium, Karlsruhe, September 27-29, 2023, Springer.
To Appear.

Journal Articles

2024 John Alasdair Warwicker and Steffen Rebennack.
Support vector machines within a bivariate mixed-integer linear programming framework.
Expert Systems with Applications, 245:122998, 2024

John Alasdair Warwicker and Steffen Rebennack.
Efficient continuous piecewise linear regression for linearising univariate non-linear functions.
IISE Transactions, 57(3):231–245, 2024

2023 Andrei Lissovoi, Pietro S. Oliveto, and John Alasdair Warwicker[2].
When move acceptance selection hyper-heuristics outperform Metropolis and elitist evolutionary algorithms and when not.
Artificial Intelligence, 314:103804, 2023

John Alasdair Warwicker and Steffen Rebennack.
A Unified Framework for Bivariate Clustering and Regression Problems via Mixed-Integer Linear Programming.
Discrete Applied Mathematics, 336:15–36, 2023

John Alasdair Warwicker and Steffen Rebennack.
Generating Optimal Robust Continuous Piecewise Linear Regression with Outliers through Combinatorial Benders Decomposition.
IISE Transactions, 55(8):755–767, 2023

2022 John Alasdair Warwicker and Steffen Rebennack.
A Comparison of Two Mixed-Integer Linear Programs for Piecewise Linear Function Fitting.
INFORMS Journal on Computing, 34(2):1042–1047, 2022

2020 Andrei Lissovoi, Pietro S. Oliveto, and John Alasdair Warwicker[2].
Simple Hyper-Heuristics Control the Neighbourhood Size of Randomised Local Search Optimally for LeadingOnes.
Evolutionary Computation, 28(3):437–461, 2020

Refereed Conference Proceedings[1][2]

2025 Yuxuan Ma, Pietro S. Oliveto, and John Alasdair Warwicker.
Random Gradient Hyper-heuristics Can Learn to Escape Local Optima in Multimodal Optimisation.
In *Proceedings of the Genetic and Evolutionary Computation Conference*, GECCO '25. ACM, 2025.
To Appear

2024 Paul Fischer, John Alasdair Warwicker, and Carsten Witt.
A Runtime Analysis of Bias-invariant Neuroevolution and Dynamic Fitness Evaluation.
In *Proceedings of the Genetic and Evolutionary Computation Conference*, GECCO '24, p. 1560–1568. ACM, 2024

2023 Issam Abdeldjalil Ikhelef, John Alasdair Warwicker, Steffen Rebennack, Mohand Yazid Saidi, and Ken Chen.
Efficient Decomposition-Based Methods for Optimal VNF Placement and Chaining.
In *2023 24th Asia-Pacific Network Operations and Management Symposium (APNOMS)*, p. 89–94, 2023

2020 Andrei Lissovoi, Pietro S. Oliveto, and John Alasdair Warwicker.
How the Duration of the Learning Period Affects the Performance of Random Gradient Selection Hyper-heuristics.
In *Proceedings of the AAAI Conference on Artificial Intelligence*, AAAI '20, p. 2322–2329. AAAI Press, 2020

[1] Conferences are the main outlet for publications in Computer Science.
[2] Authors are listen in alphabetical order.

2019

Andrei Lissovoi, Pietro S. Oliveto, and John Alasdair Warwicker.
On the Time Complexity of Algorithm Selection Hyper-Heuristics for Multimodal Optimisation.
In *Proceedings of the AAAI Conference on Artificial Intelligence*, AAAI '19, p. 2322–2329. AAAI Press, 2019

2018

Benjamin Doerr, Andrei Lissovoi, Pietro S. Oliveto, and John Alasdair Warwicker.
On the Runtime Analysis of Selection Hyper-heuristics with Adaptive Learning Periods.
In *Proceedings of the Genetic and Evolutionary Computation Conference*, GECCO '18, p. 1015–1022. ACM, 2018

2017

Andrei Lissovoi, Pietro S. Oliveto, and John Alasdair Warwicker.
On the Runtime Analysis of Generalised Selection Hyper-heuristics for Pseudo-Boolean Optimisation.
In *Proceedings of the Genetic and Evolutionary Computation Conference*, GECCO '17, p. 849–856. ACM, 2017

Book Chapters

2023

John Alasdair Warwicker and Steffen Rebennack.
Univariate Continuous Piecewise Linear Regression.
Encyclopedia of Optimization, Panos M. Pardalos and Oleg A. Prokopyev (Eds.), Springer.
To Appear

John Alasdair Warwicker and Steffen Rebennack.
Mixed-Integer Programming Formulations for Piecewise Linear Functions.
Encyclopedia of Optimization, Panos M. Pardalos and Oleg A. Prokopyev (Eds.), Springer.
To Appear

John Alasdair Warwicker.
Hyper-heuristics for Combinatorial Optimisation.
Encyclopedia of Optimization, Panos M. Pardalos and Oleg A. Prokopyev (Eds.), Springer.
To Appear

Theses

2019

John Alasdair Warwicker.
On the Runtime Analysis of Selection Hyper-heuristics for Pseudo-Boolean Optimisation.
PhD thesis, University of Sheffield, 2019

Academic Service

Conference (Organisation Committee)

MathSEE Symposium 2023 at Karlsruhe Institute of Technology, 09/2023

Conference (Organisation Assistance)

International Conference on Operations Research (OR 2022) at Karlsruhe Institute of Technology, 09/2022

MathSEE Workshop on Explainable Artificial Intelligence (XAI) at Karlsruhe Institute of Technology, 11/2024

Program Committee Member

ACM FOGA '21, '19, ACM GECCO '25, '24, '23, '22, '19, ACM GECCO SWS '18, '17, '16, EURO OR '22, IEEE SSCI '21, '18, '17, '16, IEEE CEC '19, '17, IEEE FOCI '16, IJCAI '25, PMLR L4DC '24, SPRINGER PPSN '16

Journal Reviewer

SPRINGER Journal of Global Optimization, SPRINGER Journal of Optimization Theory and Applications, SPRINGER Algorithmica, SPRINGER Annals of Mathematics and Artificial Intelligence, IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Evolutionary Computation, INFORMS Journal On Computing, ELSEVIER Theoretical Computer Science, ELSEVIER Computers and Operations Research, ELSEVIER Information Sciences, ELSEVIER European Journal of Operations Research

Proposal Reviewer	Eurizon Fellowship Programme: Remote Research Grants for Ukrainian Researchers '23

Research Activities

Activity	Research Visit
Institution	Theory of Artificial Intelligence Laboratory, Southern University of Science and Technology, Shenzhen, China
Host Researcher	Prof. Pietro Oliveto
Dates	11/2024 – 12/2024
Activity	Research visit
Institution	Laboratory of Information Processing and Transmission, Université Sorbonne, Paris, France
Host Researcher	Dr. Mohand Yazid Saidi
Dates	11/2022
Activity	Research visit
Institution	Laboratoire d'Informatique, École Polytechnique, Paris, France
Host Researcher	Prof. Benjamin Doerr
Dates	05/2017

Invited Talks[3]

Date	22/06/2024
Location	ISMP Conference, Montreal, Canada.
Title	Efficient Continuous Piecewise Linear Regression for Linearising Univariate Nonlinear Functions
Date	25/07/2023
Location	German SIAM Student Chapters Meet Algorithmic Optimization, University of Trier, Germany
Title	A Unified Framework for Bivariate Clustering and Regression Problems via Mixed-Integer Linear Programming
Date	29/11/2022
Location	Laboratoire du Traitement et Transport de l'Information (L2TI), Université Sorbonne, Paris, France
Title	Decomposition Methods for the Multi-Network Optimal Power Flow Problem
Date	10/02/2020
Location	AAAI Conference, New York, New York, USA.
Title	How the Duration of the Learning Period Affects the Performance of Random Gradient Selection Hyper-heuristics
Date	18/07/2018
Location	GECCO Conference, Kyoto, Japan.
Title	On the Runtime Analysis of Selection Hyper-Heuristics with Adaptive Learning Periods

Technical Skills

Programming Skills	Proficient in: C, C++, IBM ILOG CPLEX, LaTeX, Maple, Mathematica, Matlab. Competent in: GAMS, Gurobi, HTML, Java, Python, PyTorch, R.
Industry Software Skills	MS Office products (Advanced), Social Media (Advanced).

[3] Non-exhaustive list.

Awards

Features	The paper “Generating Optimal Robust Continuous Piecewise Linear Regression with Outliers Through Combinatorial Benders Decomposition” by John Alasdair Warwicker and Steffen Rebennack was a featured paper in the July 2023 issue of ISE Magazine.

Grants Awarded

Grant Description	MathSEE Funding for Promotion of Interdisciplinary Mathematical Research: Bridge PhD
Project Title	Theoretical and Empirical Analysis of Matheuristics
Grant Sponsor	KIT-Center MathSEE
Dates	10/2022 – 09/2025
Grant Description	Programme Gaspard Monge: (PGMO) IROE Project Funding
Project Title	Decomposition Methods for the Non-Linear Optimal Power Flow Problem
Grant Sponsor	Fondation Mathématique Jacques Hadamard
Dates	07/2021 – 06/2024
Grant Description	PhD Student Grant
Grant Sponsor	Department of Computer Science, University of Sheffield, UK
Dates	10/2015 – 09/2018
Grant Description	Learned Society Funding
Grant Sponsor	Department of Computer Science, University of Sheffield, UK
Dates	05/2018, 11/2018

International Mobility

Passport	British Passport (UK)
German Residence	German Residence Permit (Aufenthaltstitel)

Languages

Mother Tongue	English
Advanced	German (CEFR Level: C1)