

Curriculum Vitae

Personal information

Surname(s) / First name(s)

Homepage

Nationality(-ies)

Date of birth

Wiederrecht, Sebastian

<https://www.wiederrecht.com>

German

1. November 1989

Work experience

Dates

Position held

Activity

Employer

15/07/2022 – present

Postdoctoral research fellow

Postdoctoral researcher working on structural (di)graph theory

Institute of Basic Science, Daejeon, South Korea

Dates

Position held

Activity

Employer

01/06/2021 – 31/05/2022

Postdoctoral research fellow

Postdoctoral researcher working on structural (di)graph theory

Centre national de la recherche scientifique (CNRS), Montpellier, France

Dates

Position held

Activity

Employer

15/04/2016 – 16/05/2021

Research and teaching assistant

conducting research on structural digraph theory and matching theory, preparing and giving exercise classes, and coordinating groups of student teaching assistants

Chair of Logic and Semantics at Technische Universität Berlin, Berlin, Germany

Dates

Position held

Activity

Employer

01/04/2015 – 30/04/2016

Student research assistant

Participated in a research project on strong edge colourings and graph powers

Lehrstuhl II für Mathematik at RWTH Aachen University, Aachen, Germany

Education and training

Dates

Qualification held

Honours

Thesis title

Supervisor

Committee

Name of organisation

15/04/2016 – 16/05/2021

Doctor rerum naturalium (Dr. rer. nat.)

Summa cum laude

Matching Minors in Bipartite Graphs

Professor Stephan Kreutzer

Professor Reinhard Diestel, Professor Sergey Norin

Technische Universität Berlin, Berlin, Germany

Dates	01/04/2011 – 31/03/2016
Qualification held	Master of Science (MSc) in Mathematics
Thesis title	The Strong Colors of Flowers – The Structure of Graphs with Chordal Squares
Supervisor	Professor Eberhard Triesch
Name of organisation	RWTH Aachen University, Aachen, Germany
Teaching experience	
15/04/2016 – 16/05/2021	Teaching assistant , Technische Universität Berlin
Courses taught	Teaching Assistant for <i>Algorithmic Graph Structure Theory</i> (graduate course, responsible for producing exercise material and teaching exercise courses; course taught in English) Teaching Assistant for <i>Discrete Structures</i> (undergraduate course with roughly 400 students, responsible for producing exercise material, managing student assistants, producing and supervising exams, and teaching exercise courses; course taught in German) Teaching Assistant for <i>Extremal Combinatorics</i> (graduate course, responsible for producing exercise material and teaching exercise courses; course taught in English) Teaching Assistant for <i>Game Theory</i> (graduate course, responsible for producing exercise material and teaching exercise courses; course taught in English) Teaching Assistant for <i>Logic</i> (undergraduate course with roughly 400 students, responsible for producing exercise material, managing student assistants, producing and supervising exams, and teaching exercise courses; course taught in German)
01/04/2014 – 30/09/2015	Student teaching assistant , RWTH Aachen University
Courses taught	Student Assistant for <i>Higher Mathematics I</i> (undergraduate course with roughly 2000 students, teaching exercise courses; course taught in German) Student Assistant for <i>Higher Mathematics II</i> (undergraduate course with roughly 2000 students, teaching exercise courses; course taught in German) Student Assistant for <i>Higher Mathematics III</i> (undergraduate course with roughly 2000 students, teaching exercise courses; course taught in German)
Academic activities	
2022 ⁺	Member of the organising committee of the minisymposium <i>Structural graph theory</i> at the canadian Discrete and Algorithmic Mathematics (CanaDAM) conference 2023.
2022	Co-organiser of the workshop <i>Directed minors and graph structure theory</i> within the Sparse (Graphs) Coalition.
2017	Member of the organising committee of the <i>Highlights of Algorithms</i> (HALG) conference 2017.

Awards

2020

Best talk award at 6th Annual International Conference on Algorithms and Discrete Applied Mathematics (CALDAM) for the presentation of the paper *Parameterized Algorithms for Directed Modular Width*.

Mentoring Activities

15/04/2016 –
16/05/2021

Co-supervision of
Bachelor Theses

Teaching assistant, Technische Universität Berlin

Rudi Schneider: *Catching an invisible robber on digraphs using few cops*

Maximilian Gorsky: *Bricks of Low Connectivity*

Henri Tannenber: *Packing and Hitting Directed Cycles in Non-Even Digraphs in Polynomial Time*

Ahmed Khelifi: *On 3-dicographs*

Co-supervision of
Master Theses

Maximilian Gorsky: *Towards a Characterization of König Graphs*

Publications

- 2021 – *Even Circuits in Oriented Matroids*, with Karl Heuer, Raphael Steiner. *Combinatorial Theory*, 2 (1), #3
- *Directed width parameters on semicomplete digraphs*, with Frank Gurski, Dominique Komander, Carolin Rehs. *International Conference on Combinatorial Optimization and Applications*. Springer, Cham, 2021. 615-628
- *The Flat Wall Theorem for Bipartite Graphs with Perfect Matchings*, with Archontia C. Giannopoulou. *Extended Abstracts EuroComb 2021* (pp. 429–435). Birkhäuser, Cham.
- 2020 – *Digraphs of Directed Treewidth One*. *Discrete Mathematics* 343.12: 112124.
- *Parameterized Algorithms for Directed Modular Width*, with Raphael Steiner. *Conference on Algorithms and Discrete Applied Mathematics*. Springer, Cham.
- 2019 – *On Polynomial-Time Congestion-Free Software-Defined Network Updates* with Saeed Akhoondian Amiri, Szymon Dudycz, Mahmoud Parham, Stefan Schmid. *2019 IFIP Networking Conference (IFIP Networking)* (pp. 1-9). IEEE
- Cyclewidth and the Grid Theorem for Perfect Matching Width of Bipartite Graphs*, with Roman Rabinovich, Meike Hatzel. *International Workshop on Graph-Theoretic Concepts in Computer Science* (pp. 53-65). Springer, Cham.
- 2018 – *On Chordal Graph and Line Graph Squares* with Robert Scheidweiler. *Discrete Applied Mathematics* 243: 239–247
- *Congestion-Free Rerouting of Flows on DAGs* with Saeed Akhoondian Amiri, Szymon Dudycz, Stefan Schmid. *45th International Colloquium on Automata, Languages, and Programming (ICALP 2018)*

- *On Perfect Linegraph Squares*, with Meike Hatzel.
International Workshop on Graph-Theoretic Concepts in Computer Science (pp. 252-265). Springer, Cham.

Accepted for Publication

- 2022⁺ – *Excluding a single-crossing matching minor in bipartite graphs*, with Archontia C. Giannopoulou, Dimitrios M. Thilikos
accepted at ACM-SIAM Symposium on Discrete Algorithms (SODA 2023)
- *Kernelization for Graph Packing Problems via Rainbow Matching*, with Stéphane Bessy, Marin Bougeret, Dimitrios M. Thilikos
accepted at ACM-SIAM Symposium on Discrete Algorithms (SODA 2023)
- *Killing a vortex* with Dimitrios M. Thilikos
accepted at 63rd IEEE Symposium on Foundations of Computer Science (FOCS 2022)
- *Matching Theory and Barnette’s Conjecture*, with Maximilian Gorsky, Raphael Steiner
accepted at Discrete Mathematics
- *Braces of Perfect Matching Width 2*, with Archontica C. Giannopoulou, Meike Hatzel
accepted at Electronic Journal of Combinatorics
- *Colouring Non-Even Digraphs*, with Marcelo Garlet Millani, Raphael Steiner.
accepted at Electronic Journal of Combinatorics

Submitted and Under Preparation

- 2021⁺ – *A Flat Wall Theorem for Matching Minors in Bipartite Graphs*, with Archontia C. Giannopoulou
(under preparation)
- *Two disjoint alternating paths in bipartite graphs: Weak crosses*, with Archontia C. Giannopoulou
(under preparation)
- *Two disjoint alternating paths in bipartite graphs: Conformal crosses*, with Archontia C. Giannopoulou
(submitted)
- *Excluding a Planar Matching Minor in Bipartite Graphs*, with Archontia C. Giannopoulou, Stephan Kreutzer.
(submitted)