



Meike Zehlike

PhD Researcher – Humboldt Universität zu Berlin

Since April 2016 I am a Ph.D. researcher at the *Social & Information Systems* group of MPI-SWS Saarbrücken and Humboldt Universität zu Berlin, Germany. Before I worked as a software developer and scrum master in Berlin. I am a 2017 grantee of the Data Transparency Lab Research grant and a Google WTM scholar of 2019. My research interests center around artificial intelligence and its social impact, automatic discrimination discovery and algorithmic fairness, as well as the use of artificial intelligence in medical applications.

Education

- 2016 – present **Ph.D. Researcher**, *Humboldt Universität zu Berlin*, Berlin.
Research on Discrimination Discovery and Algorithmic Fairness in Rankings and Search.
Expecting to graduate by February 2021.
- 2010 – 2014 **Diploma Degree**, *Technische Universität Dresden*, Dresden, Germany.
graduated 02/2014 with grade 1.5 – very good
- 2010 **Semester abroad**, *INSA*, Lyon, France.
Computer Science
- 2009 – 2010 **Semester abroad**, *MIIT*, Moscow, Russia.
Data Security
- 2006 – 2009 **Basic Studies**, *Technische Universität Dresden*, Dresden, Germany.
Computer Science and Arts

Diploma Thesis (2014)

- title *Pattern Recognition of Vascular Pathologies at the Cortex in Thermographic Sequences*
- grade 1.4 – very good

Experience

- 2019 – present **Research Associate**, *Max Planck Institute for Software Systems*, Saarbrücken.
Research Associate at Social and Information Systems group
- 2019 **Visiting Researcher**, *VIDA Lab, New York University*, New York City, USA.
Collaboration with Julia Stoyanovich
- 2018 **Visiting Researcher**, *group WSSC, Universidad Pompeu Fabra*, Barcelona, Spain.
Collaboration with Carlos Castillo
- 2016 – 2019 **Research Associate**, *Technische Universität Berlin*, Berlin.
Research associate and lecturer at CIT institute
- 2014 – 2016 **Web Application Developer and Scrum Master**, *Projektron GmbH*, Berlin.
Project manager and leader of a team of seven developers
Web application development of project management software
- 2013 – 2014 **Research Assistant**, *Technische Universität Dresden*, Dresden.
Design and implementation of a model of the brain surface temperature
Design and implementation of a pattern recognition algorithm to find vascular pathologies
Analysis, visualization and presentation of the results

Projects

- 2020 **Ford Works Council Consultancy, Industry Collaboration**, Ford Germany and IG Metall.
Examining an employee selection procedure for potential bias and discrimination. Education of the works council on algorithmic bias and consultancy on how to preserve employee rights in algorithmic selection procedures.
- 2018–2019 **FairSearch**, *Project co-lead, Algorithm Research*.
Implementation of stand-alone programming libraries for fair search results in Java and Python, plus an interface to Elasticsearch for both. Java and Python. <https://github.com/fair-search>
- 2017–2020 **www.fairness-measures.org**, *Project lead*.
Web collection of methods and datasets from the field of algorithmic fairness. <https://www.fairness-measures.org>

Awards and Scholarships

- 2019 – present **PhD student member of the ELLIS Society**.
- 2019 **Google Women Techmaker Scholarship EMEA**.
Scholarship of 7000€ to support research and career. Attended Google student retreat in London.
- 2017 – 2019 **Data Transparency Lab Research Grant**.
Grant of 50,000€ for the design and implementation of web tools that enable fairness accountability and transparency in machine learning systems
- 2016 – 2019 **SOAMED Graduate School**.
PhD school on service-oriented Architectures for the Integration of Software-based Processes, exemplified by Health Care Systems and Medical Technology
- 2010 – 2012 **Femtec Network, Career Building Scholarship**.
Career building program for female future leaders from science, technology, engineering and mathematics
- 2010 **Erasmus Scholarship**.
Exchange abroad in Lyon, France
- 2009 **DAAD "GoEast" Scholarship**.
Semester abroad in Moscow, Russia
- 2009 **DAAD Summer School Tomsk/Moscow Scholarship**.
Language Summer School in preparation of the exchange in Moscow

Publications

Vocational

- 2020 **Fairness in Ranking: A Survey**, Meike Zehlike, Ke Yang, and Julia Stoyanovich, submitted to ACM CSUR.
- 2020 **Fair Top-k Ranking with Multiple Protected Groups**, Meike Zehlike, Tom Sühr, Ricardo Baeza-Yates, Francesco Bonchi, Carlos Castillo, and Sara Hajian, submitted to Elsevier IP&M Special Issue on Fairness.
- 2020 **Matching Code and Law: Achieving Algorithmic Fairness with Optimal Transport**, Meike Zehlike, Philipp Hacker, Emil Wiedemann, 4th Workshop on Mechanism Design for Social Good (MD4SG20), Virtual Venue.
- 2020 **Matching Code and Law: Achieving Algorithmic Fairness with Optimal Transport**, Meike Zehlike, Philipp Hacker, Emil Wiedemann, Data Mining and Knowledge Discovery. 1/2020.
- 2019 **FairSearch: A Tool for Fairness in Ranked Search Results**, Meike Zehlike, Tom Sühr, Carlos Castillo, Ivan Kitanovski, Proceedings of the Web Conference 2020. WWW, 2020, Taipei, Taiwan.
- 2019 **Two-Sided Fairness for Repeated Matchings in Two-Sided Markets: A Case Study of a Ride-Hailing Platform**, Tom Sühr, Asia J. Biega, Meike Zehlike, Krishna P. Gummadi and Abhijnan Chakraborty, Proceedings of the 2019 Conference on Knowledge Discovery and Data Mining. SIGKDD, 2019.
- 2019 **FairSearch: A Programming Library for Fair Search Results**, Meike Zehlike, Carlos Castillo, Ivan Kitanovski, DSSGW@WWW 2019, San Francisco, US. Extended Abstract.

- 2018 **Disparate Exposure in Learning to Rank**, *Meike Zehlike*, European Symposium Series on Societal Challenges in Computational Social Science. 2018, Cologne, Germany.
Poster Presentation
- 2018 **Reducing Disparate Exposure in Ranking: A Learning To Rank Approach**, *Meike Zehlike and Carlos Castillo*, Proceedings of the Web Conference 2020. WWW, 2020, Taipei, Taiwan.
- 2017 **Frameworks of Bias in Computer Systems and Their Application in Rankings**, *Meike Zehlike*, DAB@CIKM 2017, Singapore.
- 2017 **FA*IR: A Fair Top-k Ranking Algorithm**, *Meike Zehlike, Francesco Bonchi, Carlos Castillo, Sara Hajian, Mohamed Megahed, and Ricardo Baeza-Yates*, Proceedings of the 2017 ACM on Conference on Information and Knowledge Management. ACM, 2017, Singapore.

Miscellaneous

- 2019 **Algorithmen gegen Diskriminierung**, *Meike Zehlike and Gert G. Wagner*, Gegenblende – Debattenmagazin, 22. Mai 2019, <https://gegenblende.dgb.de/artikel/++co++2b8f6854-7c67-11e9-9f8e-52540088cada>.
- 2019 **Unfair**, *Meike Zehlike and Gert G. Wagner*, Süddeutsche Zeitung Nr. 104, 6. Mai 2019, Seite 9.
- 2016 **Mit Scrum mehr Chancengleichheit in der Softwareentwicklung (Improving Equality of Opportunity in Software Development with Scrum)**, *Meike Zehlike and Helena Barke.*, projektManagement aktuell volume(2/12).

Invited Talks and TV Appearances

- 12/2020 **Matching Code and Law**, *Bias@MD4SG*, online lecture
- 09/2020 **Bias in AI**, *Track Keynote Ethics in AI at Informatik2020*, Karlsruhe, Germany
- 03/2020 **Fairness in Algorithmic Decision Making**, *FTA Live 2020*, Berlin, Germany
- 02/2020 **Panel Discussion: Wie wird künstliche Intelligenz geschlechtergerecht?**, *Technische Universität Berlin*, Berlin, Germany
- 12/2019 **Matching Code and Law**, *Columbia University*, New York City, NY, USA
- 12/2019 **Matching Code and Law**, *IBM Research*, Yorktown, NY, USA
- 11/2019 **Disparate Exposure in Learning to Rank**, *Microsoft Research*, New York City, NY, USA
- 10/2019 **Fairness-Aware Ranking Algorithms**, *CapGemini*, Germany
- 10/2019 **Fairness in Algorithmic Decision Making**, *Yale University*, New Haven, CT, USA
- 07/2019 **Fairness-Aware Ranking Algorithms**, *Technische Universität Berlin, ALGO Lab*, Berlin, Germany
- 06/2019 **Panel Discussion on Data-Bias in Journalism**, *nr19 Jahreskonferenz*, Hamburg, Germany
- 04/2019 **Fairness-Aware Ranking Algorithms**, *Freie Universität Berlin, Human-centered Computing*, Berlin, Germany
- 09/2018 **Fairness-Aware Ranking Algorithms**, *RWTH Aachen, HumTec Group*, Aachen, Germany
- 04/2018 **Algorithms rule us all.**, *VPRO Documentary*, <https://www.vpro.nl/programmas/tegenlicht/kijk/afleveringen/2017-2018/verslaafd-aan-het-algoritme.html>, https://youtu.be/NFF_wj5jmiQ, Amsterdam, The Netherlands
- 11/2017 **Frameworks of Bias in Computer Systems and Their Application in Rankings**, *Workshop on Data and Algorithmic Bias, DAB 2017*, Singapore
- 11/2017 **Panel Discussion on Algorithmic Fairness**, *Workshop on Data and Algorithmic Bias, DAB 2017*, Singapore
- 03/2017 **On Fairness in Ranked Search Algorithms**, *Universität Hamburg, Language Technology Group*, Hamburg, Germany
- 12/2016 **IoT, Big Data and Machine Learning in the Context of Intelligent Sewage Systems**, *VDI Wissensforum*, Stuttgart, Germany

Professional Service

- 2020 **Reviewer for Elsevier IP&M Special Issue on Fairness**, **PC member FAccT 2021**, **PC member SIGIR 2020**, **PC member BIAS 2020**, **Track Chair “Ethics in AI” at Informatik 2020**.

- 2019 **PC Member FACTS-IR 2019, Subreviewer EDBT 2019.**
- 2017 – 2019 **Academic Senate Member, Faculty Board Member, TU Berlin**, Berlin, Germany.
- 2018 **Subreviewer for FAT*2019, PC Member SIGIR 2018.**
- 2017 – 2018 **Appointment Committee Member, TU Berlin**, Berlin, Germany.
 Research associate deputy of the appointment committee for the Software and Business Engineering chair
 Research associate deputy of the appointment committee for the INGC chair

Teaching And Supervision

Lecturer

- 10/2018 – 03/2019 **Practical Project for Master Students, Institute for Complex Systems, TU Berlin.**
 Programming project to implement a website to explain bias and discrimination in computer systems
- 10/2017 – 03/2018 **Practical Course for Bachelor Students, Institute for Complex Systems, TU Berlin.**
 Programming project to implement the FA*IR algorithm as a plugin into Elasticsearch and Solr

Master Thesis Supervision

- Michal Jirku Algorithmic Fairness Development in a Competitive Setting
- Frederic Mauss Creating a gender-specific data set about the users of StackOverflow.
- Stefanie Quach Extending the DELTR Algorithm to Multinomial Use Cases

Bachelor Thesis Supervision

- Flora Muscinelli Mapping Algorithmic Fairness is Contextual
- Tom Sühr Two-Sided Fairness for Repeated Matchings in Two-Sided Markets
- Jan Steffen Preßler A Data Collection to Develop Fair Machine Learning Algorithms
- Gina Diehn FA*IR as Pre-Processing Fair Machine Learning Approach
- Simon Huber Generating Discriminatory Datasets by Usage of Wasserstein Generative Adversarial Networks
- Laura Mons Benchmarking for Fair Machine Learning Algorithms
- Hyerim Hwang Extension of the FA*IR Top-k Ranking Algorithm to Multinomial Use Cases

Languages

German (native), English (fluent), Russian (advanced), French (advanced), Finnish (basic)