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.
Expecting to graduate by August 2020.

2010 – 2014 **Diploma Degree**, *Technische Universität Dresden*, Dresden, Germany.
graduated 02/2014 with grade 1.5

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 **Visiting Researcher**, *VIDA Lab, New York University*, New York City, USA.
Collaboration with Julia Stoyanovich

2019 – present **Research Associate**, *Max Planck Institute for Software Systems*, Saarbrücken.
Research Associate at Social and Information Systems group

2018 **Visiting Researcher**, *group WSSC, Universidad Pompea 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

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Projects

2018–2019 **FairSearch**, *Project co-leader, 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`

Awards and Scholarships

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

2019 **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, Taipeh, 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, Taipeh, 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

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 an 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 **PC member SIGIR 2020, PC Member BIAS 2020, Track Chair 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)

Technologies

Programming Languages	Python, Java, Matlab/Octave, C/C++