

Jakob J. Schoeffer

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EDUCATION

Karlsruhe Institute of Technology (KIT)

PhD in Information Science

Karlsruhe, Germany

Oct. 2019 – present

Georgia Institute of Technology

MS in Operations Research

Atlanta, GA, USA

May 2017

Karlsruhe Institute of Technology (KIT)

BS in Industrial Engineering and Management

Karlsruhe, Germany

Feb. 2015

KEYWORDS

Artificial intelligence (AI)-based decision-making; human-AI-collaboration; human-centered AI; perceptions of AI; algorithmic fairness; explainable AI (XAI)

PEER-REVIEWED PUBLICATIONS

- [1] **JS**, Kuehl, N., Machowski, Y. (2022). *“There is not enough information”: On the effects of transparency on perceptions of informational fairness and trustworthiness in automated decision-making*. ACM Conference on Fairness, Accountability, and Transparency (FAccT '22).
- [2] **JS**, De-Arteaga, M., Kuehl, N. (2022). *On the relationship between explanations, fairness perceptions, and decisions*. ACM CHI 2022 Workshop on Human-Centered Explainable AI (HCXAI). **Oral presentation**
- [3] **JS** (2022). *A human-centric perspective on fairness and transparency in algorithmic decision-making*. Extended Abstracts of the 2022 CHI Conference on Human Factors in Computing Systems (CHI '22). **Doctoral consortium**
- [4] **JS**, Machowski, Y., Kuehl, N. (2022). *Perceptions of fairness and trustworthiness based on explanations in human vs. automated decision-making*. 55th Hawaii International Conference on System Sciences 2022 (HICSS-55).
- [5] Hemmer, P., Kuehl, N., **JS** (2022). *Utilizing active machine learning for quality assurance: A case study of virtual car renderings in the automotive industry*. 55th Hawaii International Conference on System Sciences 2022 (HICSS-55).
- [6] **JS**,* Ritchie, A.,* Naggita, K.,* Monachou, F.,* Finocchiaro, J.,* Juarez, M. (2021). *Online platforms and the fair exposure problem under homophily*. ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO '21). **Non-archival track b/c under review at NeurIPS**
(* denotes equal contribution)
- [7] **JS**, Kuehl, N. (2021). *Appropriate fairness perceptions? On the effectiveness of explanations in enabling people to assess the fairness of automated decision systems*. Companion Publication of the 2021 Conference on Computer Supported Cooperative Work and Social Computing (CSCW '21). **Poster presentation**
- [8] **JS**, Kuehl, N., Valera, I. (2021). *A ranking approach to fair classification*. ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS '21).
- [9] **JS**, Machowski, Y., Kuehl, N. (2021). *A study on fairness and trust perceptions in automated decision making*. Transparency and Explanations in Smart Systems (TExSS) Workshop at the 26th Annual Conference on Intelligent User Interfaces (ACM IUI 2021). **Panel presentation**
- [10] Hemmer, P., Kuehl, N., **JS** (2020). *DEAL: Deep evidential active learning for image classification*. 19th IEEE International Conference on Machine Learning and Applications (ICMLA).

WORK IN PROGRESS OR UNDER REVIEW

- [1] **JS**, De-Arteaga, M., Kuehl, N. *A human-subject study on the relationship between explanations, fairness perceptions, and decisions* (working title). Work in progress.
- [2] Ehsan, U., Lee, M. K., Lim, B., Nigam, I., **JS**, Smith-Renner, A., Springer, A., Watkins, E., Zhang, T. (ordered alphabetically) *Explaining to whom? Stakeholder power dynamics in designing AI explanations for humans*. Work in progress.
- [3] Mhasawade, V., Naggita, K., Rahmattalabi, A., **JS**, Singh, H. (ordered alphabetically) *Human behavior-aware strategy-proof decision-making* (working title). Work in progress.
- [4] **JS**, Kuehl, N., Machowski, Y. *Perceptions of informational fairness and trustworthiness in human vs. AI-based decision-making*. Under review at Business & Information Systems Engineering (BISE).

- [5] Hensel, A., **JS**, Kuehl, N. *Untapping analytical synergies in industrial SME ecosystems: An empirical evaluation of federated machine learning*. Under review at Decision Support Systems.
- [6] Baier, L., Schloer, T., **JS**, Kuehl, N. *Detecting concept drift with neural network model uncertainty*. Under review at 56th Hawaii International Conference on System Sciences 2023 (HICSS-56).
- [7] Jakubik, J.,* **JS**,* Hoge, V. *An empirical evaluation of estimated outcomes as explanations in human-AI decision-making*. Under review at Explainable Knowledge Discovery in Data Mining (XKDD) Workshop at ECML PKDD 2022.
- (* denotes equal contribution)

RELEVANT EXPERIENCE

Research Associate

Oct. 2019 – present

Karlsruhe Institute of Technology (KIT)

Karlsruhe, Germany

- Research on fairness, accountability and transparency in AI-based decision-making
- Project lead on AI-based service ecosystems, funded by the Federal Government
- Teaching of *Fundamentals of Digital Services* and *AI in Service Systems*

Visiting Researcher

Jan. 2022 – Apr. 2022

The University of Texas at Austin

Austin, TX, USA

- Research project at the intersection of explainability and fairness in AI-based decision-making
- Supervision by Prof. Maria De-Arteaga

(Senior) Data Scientist

July 2017 – Aug. 2019

International Business Machines Corp. (IBM)

Armonk, NY, USA

- Worked at the Chief Analytics Office, supporting IBM's C-suite
- Developed and implemented statistical and machine learning models for decision support
- Managed team of 5 data scientists and consultants
- Co-led team's recruiting efforts, both strategy and execution

Research and Teaching Assistant

Sept. 2013 – Aug. 2016

Karlsruhe Institute of Technology (KIT)

Karlsruhe, Germany

- Worked as a RA and TA in the field of mathematical optimization
- Offered tutorials to >100 undergraduate and graduate students
- Graded assignments and exams in mathematical optimization and stochastic modeling

OTHER

Current Extracurricular Work:

- MD4SG (Bias, Discrimination, and Fairness working group) project lead since Mar. 2020
- Data Science for Social Good (DSSG) Solve volunteer since July 2020

Invited Talks:

- *On the relationship between explanations, fairness perceptions, and decisions* @ UT Austin (Apr. 2022)
- *Perceptions of fairness and trustworthiness in AI-based decision-making* @ KIT Speaker Series (Nov. 2021)
- *(Un)Fairness in AI-based decision-making* @ Medienakademie Köln (Sept. 2021)
- *Fairness and transparency in AI-based decision-making* @ Mittelstand 4.0-Kompetenzzentrum Saarbrücken (Feb. 2021)

Academic Service:

- Program committee (PC) member at
ACM EAAMO '21, '22
TExSS Workshop @ ACM IUI '22
TRAIT Workshop @ ACM CHI '22
HMCaT Workshop @ ICML '22
- Reviewing at various additional conferences (e.g., ACM CSCW, ICIS, HICSS)

Programming: Python, Java, SQL, R, MATLAB

Honors & Awards: Full-ride graduate scholarship (USA) by the German Academic Exchange Service (DAAD); Manager's Choice Award (IBM); IBM Chief Analytics Office Eminence & Excellence Award; Research travel grant (USA) by the Karlsruhe House of Young Scientists (KHYS)

Hobbies (sample): Outdoor sports, climbing, biking, squash, cooking, photography, design, modern art, music