Jakob J. Schoeffer

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Education

Karlsruhe Institute of Technology (KIT) — Karlsruhe, Germany
PhD in Information Science — *Oct. 2019 – present*

Georgia Institute of Technology — Atlanta, GA, USA
MS in Operations Research — *May 2017*

Karlsruhe Institute of Technology (KIT) — Karlsruhe, Germany
BS in Industrial Engineering and Management — *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] **Schoeffer, J.**, 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] **Schoeffer, J.**, 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] **Schoeffer, J.** (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] **Schoeffer, J.**, 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., **Schoeffer, J.** (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] **Schoeffer, J.**,* 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] **Schoeffer, J.**, 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] **Schoeffer, J.**, Kuehl, N., Valera, I. (2021). *A ranking approach to fair classification.* ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS '21).

[9] **Schoeffer, J.**, 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., **Schoeffer, J.** (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] **Schoeffer, J.**, De-Arteaga, M., Kuehl, N. (2022). *A human-subject study on the relationship between explanations, fairness perceptions, and decisions* (working title). Work in progress.

[2] **Schoeffer, J.**, Kuehl, N., Machowski, Y. (2022). *Perceptions of informational fairness and trustworthiness in human vs. AI-based decision-making.* Under review at Business & Information Systems Engineering (BISE).

[3] Hensel, A.,* **Schoeffer, J.**,* Kuehl, N. (2022). *Untapping analytical synergies in industrial SME ecosystems: An empirical evaluation of federated machine learning.* Under review at Decision Support Systems.
(* denotes equal contribution)

[4] Baier, L., Schloer, T., **Schoeffer, J.**, Kuehl, N. (2022). *Detecting concept drift with neural network model uncertainty*. Under review at 56th Hawaii International Conference on System Sciences 2023 (HICSS-56).

[5] Jakubik, J.,* **Schoeffer, J.**,* Hoge, V. (2022). *An empirical evaluation of estimated outcomes as explanations in human-AI decision-making*. Under review at 4th International Workshop on Explainable Knowledge Discovery in Data Mining (XKDD) 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 *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