

# Jakob J. Schoeffer

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## EDUCATION

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<b>Karlsruhe Institute of Technology (KIT)</b> <i>PhD in Information Systems and Human-Computer Interaction</i>	Karlsruhe, Germany 2019 – Q4 2023 (expected)
<b>Georgia Institute of Technology</b> <i>MS in Operations Research</i>	Atlanta, GA, USA 2016 – 2017
<b>Karlsruhe Institute of Technology (KIT)</b> <i>BS in Industrial Engineering and Management</i>	Karlsruhe, Germany 2011 – 2015

## KEYWORDS

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

## PEER-REVIEWED PUBLICATIONS

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- [1] Jakubik, J., **JS**, Hoge, V., Voessing, M., Kuehl, N. *An empirical evaluation of predicted outcomes as explanations in human-AI decision-making*. ECML PKDD 2022 Workshop on Explainable Knowledge Discovery in Data Mining (XKDD).
- [2] **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). **Acceptance rate 25%**
- [3] **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 (acceptance rate 24%)**
- [4] **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**
- [5] **JS**, Machowski, Y., Kuehl, N. (2022). *Perceptions of fairness and trustworthiness based on explanations in human vs. automated decision-making*. 55<sup>th</sup> Hawaii International Conference on System Sciences 2022 (HICSS-55). **Acceptance rate ~45%**
- [6] Hemmer, P., Kuehl, N., **JS** (2022). *Utilizing active machine learning for quality assurance: A case study of virtual car renderings in the automotive industry*. 55<sup>th</sup> Hawaii International Conference on System Sciences 2022 (HICSS-55). **Acceptance rate ~45%**
- [7] **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**  
(\* denotes equal contribution)
- [8] **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**
- [9] **JS**, Kuehl, N., Valera, I. (2021). *A ranking approach to fair classification*. ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS ’21). **Acceptance rate 37%**
- [10] **JS**, Machowski, Y., Kuehl, N. (2021). *A study on fairness and trust perceptions in automated decision making*. Transparency and Explanations in Smart Systems (TESS) Workshop at the 26<sup>th</sup> Annual Conference on Intelligent User Interfaces (ACM IUI 2021). **Panel presentation**
- [11] Hemmer, P., Kuehl, N., **JS** (2020). *DEAL: Deep evidential active learning for image classification*. 19<sup>th</sup> IEEE International Conference on Machine Learning and Applications (ICMLA).

## WORK UNDER REVIEW OR IN PROGRESS

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- [1] **JS**, De-Arteaga, M., Kuehl, N. *On explanations, fairness, and appropriate reliance in human-AI decision-making*. Under review.
- [2] **JS**, Kuehl, N., Machowski, Y. *Perceptions of informational fairness and trustworthiness in human vs. AI-based decision-making*. Under review.
- [3] Hensel, A., **JS**, Kuehl, N. *Untapping analytical synergies in industrial SME ecosystems: An empirical evaluation of federated machine learning*. Under review.
- [4] 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.
- [5] Mhasawade, V., Naggita, K., Rahmattalabi, A., **JS**, Singh, H. (ordered alphabetically) *Human behavior-aware strategy-proof decision-making* (working title). Work in progress.

## RELEVANT EXPERIENCE

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<b>Research Associate</b> <i>Karlsruhe Institute of Technology (KIT)</i> <ul style="list-style-type: none"><li>• Research on fairness and explainability in AI-based decision-making</li><li>• Project lead on AI-based service ecosystems for SMEs, funded by the German Federal Government</li><li>• Teaching of <i>Digital Services: Foundations</i> and <i>AI in Service Systems</i></li></ul>	Oct. 2019 – present <i>Karlsruhe, Germany</i>
<b>Visiting Researcher</b> <i>The University of Texas at Austin</i> <ul style="list-style-type: none"><li>• Research on the relationship between explanations, fairness, and reliance in human-AI decision-making</li><li>• Supervision by Maria De-Arteaga</li></ul>	Jan. 2022 – Apr. 2022 <i>Austin, TX, USA</i>
<b>(Senior) Data Scientist</b> <i>International Business Machines Corp. (IBM)</i> <ul style="list-style-type: none"><li>• Worked at the Chief Analytics Office, supporting IBM's C-suite</li><li>• Developed and implemented statistical and machine learning models for decision support</li><li>• Managed team of 5 data scientists and consultants</li><li>• Co-led team's recruiting efforts, both strategy and execution</li></ul>	July 2017 – Aug. 2019 <i>Armonk, NY, USA</i>
<b>Research and Teaching Assistant</b> <i>Karlsruhe Institute of Technology (KIT)</i> <ul style="list-style-type: none"><li>• Worked as a RA and TA in the field of mathematical optimization</li><li>• Offered tutorials to &gt;100 undergraduate and graduate students</li><li>• Graded assignments and exams in mathematical optimization and stochastic modeling</li></ul>	Sept. 2013 – Aug. 2016 <i>Karlsruhe, Germany</i>

## ACQUIRED FUNDING & AWARDS (SAMPLE)

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<b>Research Travel Grant, USA</b> <i>Karlsruhe House of Young Scientists (KHYS)</i> <ul style="list-style-type: none"><li>• Merit-based scholarship for research stay at UT Austin</li><li>• Value of ~6k €</li></ul>	2022
<b>Data Science Education Program</b> <i>Siemens Gamesa Renewable Energy (SGRE)</i> <ul style="list-style-type: none"><li>• Project acquisition and execution of data science and machine learning educational program for SGRE employees</li><li>• Funding volume of 35k €</li></ul>	2021
<b>Graduate Scholarship, USA</b> <i>German Academic Exchange Service (DAAD)</i> <ul style="list-style-type: none"><li>• Merit-based full-ride scholarship for pursuing the MS in Operations Research (MSOR) program at Georgia Tech</li><li>• Value of ~45k €</li></ul>	2016

**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 effects of attention-based explanations on fairness perceptions and decisions* @ WU Wien (Nov. 2022, upcoming)
- *On explanations, fairness, and appropriate reliance in human-AI decision-making* @ Karlsruhe Service Summit (Oct. 2022)
- *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  
TESS Workshop @ ACM IUI '22  
TRAIT Workshop @ ACM CHI '22  
HMCaT Workshop @ ICML '22
- Reviewing at various additional conferences (e.g., CSCW, CHI, ICIS, HICSS)

**Programming:** Python, SQL, R, MATLAB

As of October 9, 2022