

Nil-Jana Akpinar

Ph.D. Student in Statistics and Machine Learning

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RESEARCH INTERESTS

My research interests lie in statistical methodology, machine learning in high-stakes decision settings, and fairness, accountability and transparency in machine learning.

EDUCATION

Carnegie Mellon University

Ph.D. in Statistics and Machine Learning (joint), current GPA: 4.0/4.0

Advisors: Alexandra Chouldechova and Zachary Lipton

Thesis: The Role of Noise, Proxies, and Dynamics in Algorithmic Fairness

Pittsburgh, PA

Aug 2018 - May 2023

Carnegie Mellon University

M.S. in Statistics, GPA: 4.0/4.0

Pittsburgh, PA

Aug 2018 - May 2020

University of Freiburg

M.S. in Mathematics

Germany

Oct 2015 - July 2018

Thesis: Heuristic Solvers for Edge Clique Cover Graph Problems Based on Deep Neural Networks

University of Freiburg

B.S. in Economics

Germany

Oct 2013 - Sept 2017

Thesis: The Role of Sentiment and Cultural Differences in the Communication Process of e-Negotiations

University of Freiburg

B.S. in Mathematics

Germany

Oct 2012 - Sept 2015

Thesis: The p -adic Logarithm and Brumer's p -adic Version of Baker's Theorem

SELECTED PUBLICATIONS

Conference.....

- Akpinar, N.-J., Nagireddy, M., Stapelton, L., Cheng, H.-F., Zhu, H., Wu, S. and Heidari, H. (2022) *A Sandbox Tool to Bias(Stress)-Test Fairness Algorithms*. Working paper.
- Akpinar, N.-J., DiCiccio, C., Nandy, P. and Basu, K. (2022) *Long-Term Dynamics of Fairness Intervention in Connection Recommender Systems*. AAAI / ACM Conference on Artificial Intelligence, Ethics, and Society (AIES 2022).
- Akpinar, N.-J., De-Arteaga, M. and Chouldechova, A. (2021) *The effect of differential victim crime reporting on predictive policing systems*. Conference on Fairness, Accountability, and Transparency (FAccT 2021).
- Akpinar, N.-J., Ramdas, A. and Acar, U. (2020) *Analyzing Student Strategies In Blended Courses Using Clickstream Data*. Thirteenth International Conference on Educational Data Mining (EDM 2020).
- Akpinar, N.-J., Kratzwald, B. and Feuerriegel, S. (2020). *Sample Complexity Bounds for Recurrent Neural Networks with Application to Combinatorial Graph Problems*. Thirty-Fourth Conference on Artificial Intelligence (AAAI 2020) (Student Abstract).
- Akpinar, N.-J., Alfano, S., Kersten, G. and Yu, B. (2017). *The Role of Sentiment and Cultural Differences in the Communication Process of e-Negotiations*. In: Group Decision and Negotiation: A Socio-Technical Perspective (GDN 2017), p.132-144.

Workshop.....

- Akpinar, N.-J., Leqi, Liu, Hadfield-Menell, Dylan and Lipton, Zachary (2022) *Counterfactual Metrics for Auditing Black-Box Recommender Systems for Ethical Concerns*. Workshop on Responsible Decision Making in Dynamic Environments. International Conference on Machine Learning (ICML 2022).

HONORS & AWARDS

- Amazon Graduate Research Fellowship (2021)
- Invited to FAccT Doctoral Consortium (2021, 2022)
- AAAI best three minute student presentation award (2020)
- Research visit grant by the German National Academic Foundation (2016)
- Full study scholarship by the German National Academic Foundation (2013 - 2018)
- Economics Award by Südwestmetall (2012)
- Mathematics Award by the German Mathematical Society (2012)

EXPERIENCE

Carnegie Mellon University

Graduate Researcher (ACMI lab)

Pittsburgh, PA

since Aug 2018

- Research focuses on algorithmic fairness and machine learning in high-stakes decision settings.
- Advisors: Alexandra Chouldechova and Zachary Lipton

LinkedIn Corporation

Artificial Intelligence - Machine Learning Engineering Intern

Sunnyvale, CA

May 2021 - Aug 2021

- Research on long-term dynamics of fairness enhancement in two-sided marketplace settings.
- Manager: Sakshi Jain (Responsible AI team)

LinkedIn Corporation

Fairness and Privacy Research Engineering Intern

Sunnyvale, CA

May 2020 - Aug 2020

- Developed methods for data anonymization and built a machine learning pipeline for Named Entity Recognition.
- Manager: Ting Chen (Anti-Abuse team)

University of Freiburg

Research Assistant

Germany

Apr 2016 - July 2018

- Data analysis in R, preparation of teaching materials and homeworks, literature reviews and editing research papers.
- Department: Information Systems Research Department

Concordia University

Visiting Scholar

Montréal, Canada

Sept 2016 - Nov 2016

- Research on communication patterns in electronic negotiations.
- Faculty: Prof. Gregory Kersten (Concordia University) and Prof. Dirk Neumann (University of Freiburg)

TEACHING AND MENTORSHIP

Carnegie Mellon University & Giant Eagle

Data Science Initiative Fellow

Pittsburgh, PA

Jan 2020 - May 2020

- Mentored five undergraduate students in corporate data science consulting project with supermarket chain Giant Eagle.
- Methods: Feature engineering, logistic regression, random forests

Carnegie Mellon University & Penguin Random House

Data Science Initiative Fellow

Pittsburgh, PA

Aug 2019 - Dec 2019

- Advised four undergraduate students in a corporate consulting project with the book publisher Penguin Random House.
- Methods: Generalized additive models, clustering, logistic regression, random forests

Carnegie Mellon University

Teaching Assistant

Pittsburgh, PA

Aug 2018 - May 2020

- Department of Statistics and Data Science: Statistical Graphics and Visualization (head TA), Text Analysis, Advanced Methods for Data Analysis, Probability Theory for Computer Scientists

University of Freiburg

Germany

- Department of Mathematics: Linear Algebra, Mathematics for Students of Natural Sciences, Introduction to Programming
- Information Systems Research Department: Management Information Systems, Introduction to Programming in R

INVITED TALKS

- LinkedIn Responsible AI team (2022).
- AMS Sectional Meeting in Special Session on Social Change In and Through Mathematics and Education (2021).
- Guest lecture on Word Embeddings in Text Analysis class, CMU (2019).

SELECTED PRESS

- *Algoritmos de predicción policial: para qué se usan y por qué se ensañan con los más pobres*, El País (2021)
- *Predictive policing is still racist—whatever data it uses*, MIT Technology Review (2021)

SERVICE

- Reviewer:
 - JMLR 2022
 - FAccT 2022
 - Neurips 2021
 - ICML 2021, Workshop ML4Data: Automated Creation, Privacy, Bias
- Area chair:
 - ICLR 2021, Workshop Responsible AI
- Editor of the ML@CMU blog (since 2021)
- Organizer of the Fairness, Ethics, Accountability and Transparency reading group at CMU (2021)
- Board member of CMQ+, the LGBTQIA+ and allies graduate student group at CMU (2019, 2020)
- Three times elected Member of the Faculty Council, School of Mathematics and Physics, University of Freiburg (2015 - 2018)
- Elected Member of the Senate, University of Freiburg (2015)
- Member of the student council, Department of Mathematics, University of Freiburg (2013 - 2018). Includes member of the examination board and faculty appointment committees.

PROGRAMMING

- **Languages:** Python, R, \LaTeX
- **GitHub:** <https://github.com/nakpinar>

LANGUAGES

- **Native / Fluent:** German, English
- **Basic / Beginner:** Turkish, Spanish, French

Last Updated: April 2022