

# Amifa Raj

Boise State University

☎ (208)600-3034  
✉ amifaraj@gmail.com  
📄 amifaraj.github.io

## Education

- 2018-present **Ph.D Computer Science** | Boise State University | Boise, ID  
Advisor: Michael Ekstrand | Expected completion 2023 | CGPA 3.85/4.00
- 2013-2017 **BS Computer Science & Engineering** | University of Dhaka | Dhaka, Bangladesh  
CGPA 3.52/4.00

## Research Experience

- 2018-present **Research Assistant** | People & Information Research Team | Boise State University
- Focusing on addressing algorithmic fairness issues within information access systems
  - Developing algorithms in *Python* for *LensKit* open-source recommendation toolkit
  - Supervising undergraduates in research work
- 2022 **Applied Scientist Intern** | WebXT, Search & Distribution Team | Microsoft
- Worked on a project related to representational harm in search engines
  - Designed user query reformulation analysis to better understand user information needs
  - Learned to use proprietary big data tools and code sharing platform

## Teaching Experience

- 2018 - 2019 **Teaching Assistant** | Boise State University | Boise, ID
- Tutored object oriented programming and data structure course, CS 221, for two terms
  - Engaged with students to foster learning and understanding of course material
  - Graded programming projects and clarified student confusion regarding assignments
- 2018 **Lecturer** | Department of Computer Science & Engineering | State University of Bangladesh
- Taught *Intro to Programming*, *Algorithms*, and *Networking* courses
  - Supervised lab sections for courses to support interactive learning

## Publications

- 2022 **Amifa Raj**, Michael D. Ekstrand “Measuring Fairness in Ranked Output”. Presented at *the 45th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2022)*. DOI 10.1145/3477495.35320187
- 2022 **Amifa Raj**, Michael D. Ekstrand “Fire Dragon and Unicorn Princess; Gender Stereotypes and Children’s Products in Search Engine Responses”. Presented at *the SIGIR ecom’22: ACM SIGIR Workshop on eCommerce*. arXiv:2206.13747
- 2021 Lawrence Spear, Ashlee Milton, Garrett Allen, **Amifa Raj**, Michael Green, Michael D. Ekstrand, and Maria Soledad Pera. “Baby Shark to Barracuda: Analyzing Children’s Music Listening Behavior”. Presented at *15th ACM Conference on Recommender Systems (RecSys 21)* Late-Breaking Results. DOI 10.1145/3460231.3478856

- 2021 **Amifa Raj**, Ashlee Milton, and Michael D. Ekstrand. “Pink for Princesses, Blue for Superheroes: The Need to Examine Gender Stereotypes in Kids’ Products in Search and Recommendations”. Presented at *KidRec ’21: 5th International and Interdisciplinary Perspectives on Children & Recommender and Information Retrieval Systems (KidRec) Search and Recommendation Technology through the Lens of a Teacher- Co-located with ACM IDC 2021*. *arXiv:2105.09296 [cs.IR]*.
- 2020 **Amifa Raj**, Connor Wood, Ananda Montoly and Michael D. Ekstrand. “Comparing Fair Ranking Metrics”. Presented at *3rd FAccTRec Workshop on Responsible Recommendation at 14th ACM Conference on Recommender Systems (RecSys 20)*. *arXiv:2009.01311[cs.IR]*.

## Selected Projects

- 2020 -2022 **Comparing Fair Ranking Metrics**
- Supervised undergraduate researchers in remote REU
  - Describe and compare exposure and rank-fairness metrics in unified framework
  - Identify gaps between their original presentation and recommender systems application
  - Direct comparison of their outcomes with the same data and experimental setting
  - Sensitivity analysis to observe the impact of design choices
  - **Tech stack:** NumPy, Pandas, scikit-learn, matplotlib
- 2021 - 2022 **Exploring Gender Stereotypes Associated with Children’s Products in Information Retrieval Systems**
- Explore existence of gender stereotypes associated with kid’s products in various IR systems
  - Investigate tendency of manifesting and propagating gender stereotypes through IR systems.
  - **Tech Stack:** Numpy, Pandas, NLTK, scikit-learn, Pandas  $\text{\LaTeX}$
- 2021 **Kid’s Music Preference Analysis**
- Analyze music preferences of kids to generate relevant recommendations for them.
  - Investigate user traits and the effect of different music aspects on listening behavior.
  - **Tech stack:** Numpy, Pandas, scikit-learn, matplotlib

## Conferences Attended

- Nov. 2021 Text REtrieval Conference 2021 (TREC 2021)
- Sep. 2021 ACM Conference on Recommender Systems (RecSys 21)
- June. 2021 ACM Interaction Design and Children (IDC) conference 2021
- Mar. 2021 ACM Conference on Fairness, Accountability, and Transparency (ACM FAccT 2021)
- Nov. 2020 Text REtrieval Conference 2020 (TREC 2020)
- Sep. 2020 ACM Conference on Recommender Systems (RecSys 20)
- Sep. 2019 ACM Conference on Recommender Systems (RecSys 19)

## Academic Service

- 2022 **Student Volunteer Co-Chair**, ACM RecSys 2022
- 2022 **Co-organizer**, 5th FAccTRec Workshop:Responsible Recommendation at ACM RecSys 2022
- 2022 **Co-organizer**, TREC 2022 Fair Ranking Track
- 2021 **Student Volunteer**, ACM RecSys 2021
- 2021 **Student Volunteer**, ACM FAccT 2021
- 2020 **Co-organizer**, TREC 2021 Fair Ranking Track
- 2020 **Student Volunteer**, ACM RecSys 2020
- 2019 **Student Volunteer**, ACM RecSys 2019