Amifa Raj

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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** "Fair Ranking Metrics". Presented at the Doctoral symposium of *16th ACM Conference on Recommender Systems (RecSys 2022). DOI 10.1145/3523227.3547430*

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
- 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 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

Sep. 2022 ACM Conference on Recommender Systems (RecSys 22)
July. 2022 ACM SIGIR Conference 2022 (SIGIR 2022)
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
2022-2021 **Co-organizer**, TREC 2022 Fair Ranking Track and 2021 Fair Ranking Track
2021 **Student Volunteer**, ACM RecSys 2021, 2020, 2019
2021-2019 **Student Volunteer**, ACM FAccT 2021