Himan Abdollahpouri, Ph.D.

Research Scientist at Spotify

E-mail: habdollahpouri@gmail.com

Summary

I am a Research Scientist at Spotify Research in New York City. Prior to Spotify, I was a Postdoctoral Fellow at the Spiegel Research Center at Northwestern University working on personalization and recommender systems for media and news. I am experienced in state-of-the-art research in recommender systems and personalization. In particular, I am known for my work on popularity bias in recommender systems and for developing algorithms to tackle such bias from the perspective of multiple stakeholders. My research in popularity bias and recommender systems has garnered more than 1500 citations since 2017, indicating the influence of my work in the research community. In addition to being active in the research community, I also have experience in end-to-end large-scale Machine Learning in the industry.

EDUCATION

University of Colorado Boulder — Boulder, USA

Ph.D. in Computer and Information Science — 2020

Thesis: Popularity bias in recommendation: A multi-stakeholder perspective

Iran University of Science and Technology — Tehran, Iran

MSc in Artificial Intelligence — 2012

Thesis: A switching hybrid recommender system using user-based collaborative filtering and trust-aware recommendation

ACADEMIC EXPERIENCE

Postdoctoral Fellow — **Spiegel Research Center-Northwestern University**

September 2020 - August 2021 — Evanston, IL

• Conducted research on developing personalization models for local news to increase subscriber retention and engagement.

• Developed multi-objective and multi-stakeholder recommender systems for better personalization in marketplaces where there are multiple stakeholders involved.

• Conducted research on incorporating social good and societal values in news recommendation.

Research Assistant — **THAT Recommender Systems Lab**

January 2019 - July 2020 — Boulder, USA

• Conducted research on multi-stakeholder and fairness-aware recommendation.

• Collaborated in writing one NSF grant proposal on fairness and transparency in in recommender systems.

INDUSTRY EXPERIENCE

Research Scientist-Machine Learning — **Spotify**

September 2021 - Present — NYC, NY

• Leading the research on long-term optimization in recommender systems

• Developing approaches for balancing the platform needs and user satisfaction on Spotify Home.

• Developing causal adaptive learning approaches for personalization.

Research Scientist Intern — **Spotify**

June 2020 - August 2020 — NYC, NY

• Developed a multi-objective optimization algorithm to diversify the recommendations according to certain criteria such as genre and popularity while matching users' preferences.
• The proposed model went to the production and significantly improved the existing model.

Machine Learning Intern (PhD level) **Pandora Media**
June 2018- September 2018 Oakland, CA
• Built a model for predicting user interest in song repetition. The model outperformed the existing approaches at Pandora.

Machine Learning Intern (PhD level) **Pandora Media**
June 2017- September 2017 Oakland, CA
• Built a model for predicting the likelihood of user's session termination using Hidden Markov Models (HMM).
• Published some parts of my work as a poster at ACM RecSys 2017 and also a workshop paper at the same conference.

Software Developer **Saman Bank**
December 2013- April 2014 Tehran, Iran
• Participated in developing the first internet-bank application at Saman Bank in Iran.

Software Developer **TOSAN CO.**
December 2011- December 2013 Tehran, Iran
• Developed the telephone-bank application.
• Participated in developing a mobile-bank application based on USSD (Unstructured Supplementary Service Data.)

PUBLICATIONS Click here for my Google Scholar Profile

Total citations: 1590
h-index: 17
i10-index: 28

Book Chapters:

[1] **Himan Abdollahpouri** and Robin Burke. "Multi-stakeholder recommender systems". In recommender systems handbook 3rd Edition, 2022.

Journals:

[2] Mansoury, Masoud, **Himan Abdollahpouri**, Mykola Pechenizkiy, Bamshad Mobasher, and Robin Burke. "A graph-based approach for mitigating multi-sided exposure bias in recommender systems." ACM Transactions on Information Systems (TOIS) 40, no. 2 (2021): 1-31. (**impact factor=4.797**)

[1] **Abdollahpouri, Himan**, Gediminas Adomavicius, Robin Burke, Ido Guy, Dietmar Jannach, Toshihiro, Kamishima, Jan Krasnodebski and Luiz Pizzato. Research Directions in Multi-stakeholder Recommendation. Journal of User Modeling, User Adapted Interactions (UMUAI) 2020. (**impact factor=4.412**)

Peer-reviewed Conferences:

[11] Sinan Seymen, **Himan Abdollahpouri**, and Edward C. Malthouse. "A Constrained Optimization Approach for Calibrated Recommendations". In Fifteenth ACM Conference on Recommender Systems (**RecSys**), 2021. (Accepted). **acceptance rate: 18%**

[10] **Himan Abdollahpouri**, Masoud Mansoury, Robin Burke, Bamshad Mobasher, and Edward Malthouse. "User-centered Evaluation of Popularity Bias in Recommender Systems."In The 29th Conference on User Modeling, Adaptation and Personalization (**UMAP**) (2021). **acceptance rate: 22%**

[9] **Abdollahpouri, Himan**, Masoud Mansoury, Robin Burke, and Bamshad Mobasher. "The Connection Between Popularity Bias, Calibration, and Fairness in Recommendation." In Fourteenth ACM Conference on Recommender Systems (**RecSys**), pp. 726-731. 2020. **acceptance rate: 19%**

[8] Mansoury, Masoud, **Himan Abdollahpouri**, Mykola Pechenizkiy, Bamshad Mobasher, and Robin Burke. "FairMatch: A Graph-based Approach for Improving Aggregate Diversity in Recommender Systems."In The 28th Conference on User Modeling, Adaptation and Personalization (**UMAP**) (2020). **acceptance rate: 24%**

[7] Mansoury, Masoud, **Himan Abdollahpouri**, Jessie Smith, Arman Dehpanah, Mykola Pechenizkiy, and Bamshad Mobasher. "Investigating Potential Factors Associated with Gender Discrimination in Collaborative Recommender Systems." Proceedings of the 33rd Conference on Artificial Intelligence (**FLAIRS** 2020), 2020. **acceptance rate: 45%**

[6]. **Abdollahpouri, Himan**, Robin Burke, and Bamshad Mobasher. "Managing Popularity Bias in Recommender Systems with Personalized Re-ranking Proceedings of the 32nd Conference on Artificial Intelligence (**FLAIRS** 2019) Sarasota, Florida, 2019. **acceptance rate: 40%**

[5]. **Abdollahpouri, Himan** Popularity Bias in Ranking and Recommendation Proceedings of the 2nd Conference on Artificial Intelligence, Ethics and Society (**AIES**) Honolulu, Hawaii, 2019. **acceptance rate: 36%**

[4]. **Abdollahpouri, Himan** Incorporating System-level Objectives into Recommender Systems PhD Symposium at the 30th Conference on World Wide Web (**WWW**) San Francisco, Ca, 2019. **acceptance rate: 20%**

[3]. **Abdollahpouri, Himan**, Robin Burke, and Bamshad Mobasher. "Controlling Popularity Bias in Learning-to-Rank Recommendation." Proceedings of the Eleventh ACM Conference on Recommender Systems (**RecSys**). ACM, 2017. **acceptance rate: 18%**

[2]. **Abdollahpouri, Himan**, Robin Burke, and Bamshad Mobasher. "Recommender Systems as Multistakeholder Environments." Proceedings of the 25th Conference on User Modeling, Adaptation and Personalization.(**UMAP**) ACM, 2017. **acceptance rate: 36%**

[1]. **Abdollahpouri, Himan**, and Alireza Abdollahpouri. "An approach for personalization of banking services in multi-channel environment using memory-based collaborative filtering." Proceeding of 5th Conference on Information and Knowledge Technology (**IKT**). 2013. **acceptance rate: 35%**

Peer-reviewed Workshops

[9] Sinan Seymen, **Himan Abdollahpouri**, and Edward C. Malthouse. "A unified optimization toolbox for solving popularity bias, fairness, and diversity in recommender systems". In the workshop on Multi-Objective Recommender Systems in conjunction with the Fifteenth ACM Conference on Recommender Systems (**RecSys**), 2021. (Accepted).

[8] **Abdollahpouri, Himan**, Edward Malthouse, Joseph A. Konstan, Bamshad Mobasher, and Jeremy Gilbert. "Towards the Next Generation of News Recommender Systems." Workshop on News Recommendation and Intelligence (NRI) in conjunction with The Web Conference (2021).

[7] **Abdollahpouri, Himan**, and Masoud Mansoury. "Multi-sided exposure bias in recommendation." Workshop on Industrial Recommendation (IRS) in conjunction with ACM KDD (2020).

[6] **Abdollahpouri, Himan** and Robin Burke. "Multi-stakeholder Recommendation and its Connection to Multi-sided Fairness." In Workshop on Recommendation in Multistakeholder Environments (RMSE), in conjunction with ACM RecSys (2019).

[5] **Abdollahpouri, Himan**, Masoud Mansoury, Robin Burke, and Bamshad Mobasher. "The Unfairness of Popularity Bias in Recommendation." In Workshop on Recommendation in Multistakeholder Environments (RMSE), in conjunction with ACM RecSys (2019).

[4] Mansoury, Masoud, **Himan Abdollahpouri**, Joris Rombouts, and Mykola Pechenizkiy. "The Relationship between the Consistency of Users' Ratings and Recommendation Calibration." In Workshop on Designing Human-Centric MIR Systems (2019).

[3]. Burke, Robin, and **Himan Abdollahpouri**. "Patterns of Multistakeholder Recommendation." In Workshop on Value-aware and Multi-stakeholder Recommendation (VAMS) in conjunction with ACM RecSys (2017).

[2]. **Abdollahpouri, Himan**, and Steve Essinger. "Multiple Stakeholders in Music Recommender Systems." In Workshop on Value-aware and Multi-stakeholder Recommendation (VAMS) in conjunction with ACM RecSys (2017).

[1]. Burke, Robin D, **Abdollahpouri Himan**, Mobasher Bamshad, Gupta Trinadh. "Towards Multi-Stakeholder Utility Evaluation of Recommender Systems." UMAP (Extended Proceedings). 2016.

PROFESSIONAL ACTIVITIES

Program Co-chair

- Chair of the Workshop on Multi-Objective Recommender Systems (MORS-2022) in conjunction with the 16th ACM Conference on Recommender Systems, RecSys 2022.
- Chair of the Workshop on Multi-Objective Recommender Systems (MORS-2021) in conjunction with the 15th ACM Conference on Recommender Systems, RecSys 2021.
- Workshop on Complex Recommender Systems (ComplexRec) in conjunction with the 15th ACM Conference on Recommender Systems, RecSys 2021.
- 6th recommender systems track at the 33rd Florida Artificial Intelligence Research Society (FLAIRS 2020)
- Workshop on Recommendation in Multi-Stakeholder Environments(RMSE), RecSys 2019.
- Workshop on Value-Aware and Multi-Stakeholder recommendation(VAMS), RecSys 2017.

Program Committee

- ACM RecSys 2021, ACM UMAP 2021
- Workshop on Bias in Search and Recommendation. Lisbon, Portugal (2020)
- RecSys Challenge, organized by Spotify (2018)
- RecSys Challenge, organized by Trivago (2017)

Reviewer:
- **Journals:** Electronic Commerce Research and Applications (ECRA), Information Processing and Management (IPM), User Modeling and User-Adapted Interaction (UMUAI), Transactions on Knowledge and Data Engineering (TKDE), ACM Transaction on Information Systems (TOIS), ACM Transaction on Web (TWEB).
- **Conferences:** Recsys, UMAP, IJCAI.

AWARDS

- Finalist of the 3 Minutes Thesis (3MT) presentation competition at the University of Colorado Boulder.
- Best Poster Presentation award at the 31st International Conference on Artificial Intelligence (FLAIRS 2018), Florida, USA.
- Travel grant to attend 31st International Conference on Artificial Intelligence (FLAIRS 2018), Florida, USA.
- Travel grant to attend conference on AI, Ethics and Society (AIES 2019), Honolulu, Hawaii, USA.
- Travel grant to attend 10th ACM Conference on Recommender Systems (RecSys 2016), Boston, USA.
- Travel grant to attend 9th ACM Conference on Recommender Systems (RecSys 2015), Vienna, Austria.

INVITED TALKS

- University of Bergen, Norway. Title: "User-centered Investigation of Popularity Bias in Recommender Systems" (April 2021)
- University of Kurdistan, Iran. Title: "Recommender Systems: Applications, Challenges, and Research Directions " (March 2021)
- University of Salamanca (Spain). Title: "Recommender systems: from theory to applications in industry" (June 2020)
- Sonoma State University, USA. Title: "Popularity Bias From a Multi-stakeholder Perspective" (February 2020)
- University of Colorado Boulder, USA. Title: "Multi-stakeholder Recommendation" (January 2019)
- DePaul University. Title: "Sequence-aware Music Recommendation" (October 2017)

TEACHING EXPERIENCE

Teaching Assistant — **University of Colorado Boulder**
January 2019 - May 2019 — Boulder, USA

• Teaching Assistant for Computational Reasoning in Python. I ran two labs (20 students each) and designed quiz questions for the main class (roughly 150 students).
• Guest lecturer for the Recommender Systems course taught by Prof Robin Burke.

Teaching Assistant / Grader — **DePaul University**
January 2015 - May 2017 — Chicago, USA

- Data Analysis and Regression
- Social Network Analysis
- Recommender Systems
- Introduction to Java Programming
- Computational Advertising
- Introduction to Compilers