

Myungha Jang

Applied Scientist / Machine Learning Engineer

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Profile

I am a self-motivated machine learning engineer with research background in information retrieval, graph mining, and NLP. I'm passionate about solving problems that are user-facing and good at setting scientific direction towards making improvement on the given product.

Education

- 2013 - 2019 **Ph.D. in Computer Science**, *University of Massachusetts Amherst*, MA, U.S.,
Center for Intelligent Information Retrieval.
Ph.D. Thesis: Probabilistic Models for Identifying and Explaining Controversy
- 2011-2012 **M.S. in Computer Science**, *POSTECH*, Pohang, South Korea.
- 2006-2011 **B.S. in Computer Science**, *Ewha Womans University*, Seoul, South Korea.
Study abroad at Wesleyan College, U.S. in 2009
Graduated with Magna Cum Laude

Experience

- Feb. 2022 - **Senior Research Scientist**, *Meta*, Menlo Park, CA.
- Jan 2023
- **User Taste Graph in Applied Research (July 2022 - Jan 2023)**: I drove a few projects to learn signals from graphs built from user engagement to videos and graphs built from user engagement to Reels (i.e. short videos). I have developed and tested variants of random walk graph-based algorithms and tested adding graph-clustering based retrieval candidates for videos recommendation. These algorithms were designed to identify better candidates for the retrieval phase of the Instagram Reels recommendation system
 - **Facebook Groups Content Quality (July 2021 - June 2022)**: As a tech lead, I led a cross-functional team of 8 people, including ML engineers, a product manager, and product engineers, to develop and launch UI buttons for users to give negative feedback on Facebook Group content. I developed and launched personalized ML models to predict the quality of Group content based on users' negative feedback signals on Group content. These models were then used to improve the ranking system. Additionally, I created metrics to measure the quality of the Groups Tab feed and developed models to predict the overall quality of Group posts.

- Feb. 2019 - **Research Scientist**, *Meta*, Menlo Park, CA.
- Feb. 2022
- **Facebook Hashtag Search Ranking (Feb 2020 - Jan 2021)**: I worked on the projects for improving location relevance and protecting integrity of Facebook Hashtag Search. Specifically, I worked on the development of a guardrail system that automatically identifies election-related hashtags and demotes potentially controversial or harmful content during U.S. presidential elections on the Facebook App.
 - **Personalized Integrity (Feb 2019 - Feb 2020)**: I built personalized ML models that predicts users' preference against subjective borderline-bad content on Facebook Newsfeed and created metrics that study polarization of Newsfeed with collaboration with social scientists.
- Summer 2017 **Machine Learning Software Engineer Intern**, *Facebook*, Menlo Park, CA.
- Machine Learning Intern in Whole Page Ranking Team
 - Conducted various search A/B testings and analysis and worked on developing search results ranker
- Summer 2015 **Research Intern**, *IBM T.J. Watson Research Center*, Yorktown heights, NY.
- Host: Dr. Kenneth W. Church
 - Worked on improving Watson's Automatic QA Retrieval System for customer questions regarding IBM products by analyzing and enhancing the quality of the training dataset using various NLP techniques
- 2013- Present **Research Assistant**, *Center for Intelligent Information Retrieval*, UMass Amherst.
- My research topics broadly lied on understanding controversial search query and results to help users with critical literacy. My research specifically focused on building probabilistic models to find controversial topics in the documents and create automatic summary to explain why the topic is controversial by finding representative opinions of conflicting stances from social media posts
 - Advised by Prof. James Allan
- 2011-2012 **Research Assistant**, *Information and Database Systems Lab*, POSTECH.
- Conducted research on inferring latent comparable entity relationship from query log graph to provide users a complete suggestion of other comparable entities in search query
 - Advised by Prof. Seung-won Hwang

Selected Publications

Conferences

- Youngwoo Kim, **Myungha Jang** and James Allan, Explaining Text Matching on Neural Natural Language Inference, *ACM Transactions on Information Systems (ToIS)* 2021
- **Myungha Jang** and James Allan, Explaining Controversy on the Social Media via Stance Summarization, *The 41st International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2018)*
- **Myungha Jang**, Shiri Dori-Hacohen and James Allan, Modeling Controversy Within Populations, *The 3rd ACM International Conference on the Theory of Information Retrieval (ICTIR 2017)*
- **Myungha Jang**, Jinho Choi, James Allan, Improving Document Clustering by Removing Unnatural Language, *The 3rd Workshop on Noisy User-generated Text at EMNLP (W-NUT 2017)*
- **Myungha Jang**, John Foley, Shiri Dori-Hacohen, and James Allan, Probabilistic Approaches to Controversy Detection, *The 25th ACM International Conference on Information and Knowledge Management (CIKM 2016)*
- **Myungha Jang**, James Allan, Improving Automated Controversy Detection on the Web, *The Proceedings of the 39th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2016)* pp. 865-868

- Jongwuk Lee, **Myungha Jang**, Dongwon Lee, Won-Seok Hwang, Jiwon Hong, Sang-Wook Kim, Alleviating the Sparsity in Collaborative Filtering using Crowdsourcing, *The Int'l Workshop on Crowdsourcing and Human Computation for Recommender Systems (CrowdRec)*, 2013.
- **Myungha Jang**, Jin-woo Park, Seung-won Hwang, Predictive Mining of Comparable Entities from the Web, *The 26th Association for the Advancement of Artificial Intelligence (AAAI)*, pp. 66-72, 2012.

Selected Awards

- 2016 KSEA-KOCSEA Graduate Scholarship
- 2016 Best Poster Award at UKC 2016
- 2014 Grace Hopper Celebration Scholarship
- 2009 2010 Undergraduate Research Program Fellowship (\$10,000), Korea Foundation for the Advancement of Science and Creativity

Activities

CS Women Group Co-chair at UMass Amherst 2014–2015

I served to organize programs and services for female students in the CS department at UMass.

Ewhaian (www.ewhaian.com) Administrator 2006–2008

Ewhaian is the biggest online community for students of Ewha Womans University with approximately 60,000 users. I managed the web server and the web design, helped to organize four large fund-raising parties of 5,000 people, and designed on/offline posters for numerous events.

Technical Skills

Programming: Java, Python, Pytorch, Tensorflow, C/C++, AWK/Bash, SQL

OS: Windows, UNIX, MAC OS

Tools: Adobe Illustrator and Photoshop