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Summary

Applied Researcher with experience in building Scalable ML systems for solving problems in the domain of content tagging, recommendations, click-through-rate prediction, fraud risk prediction. Strong record writing and speaking and serving on the organizing committee of academic and industry workshops and conferences. Passionate about mentoring and supporting women in tech via outreach events with organizations like Hackbright Academy, Technovation, Grace Hopper etc. Looking for leadership opportunities in a data centric organization with ML-powered product engineering teams.

Work Experience

LinkedIn

Engineering Manager, ML, Trust AI, May 2021- June 2022

Managing a team of AI/ML engineers in fighting Jobs Abuse on LinkedIn Platform (a x billion$ business). Utilizing both behavioral and content based signals to help predict the risk score of jobs posted on LinkedIn platform.
- Led the team on several cross functional projects where AI based risk scores can be leveraged to improve defenses against bad actors
- Collaborated with partners on several risk-based product controls that limited the damage to a humble 19% increase when organic volume of jobs increased by 154%
- Collaborated with partners across two different time zones and filled in gaps as the teams underwent major transition of leadership and composition
- Helped a burnt out engineer recover their energy and guided them to deliver on key projects.
- Promoted two engineers on the team (one from SWE -> Sr, another from Sr -> Staff)
- Helped improve the performance of a underperforming engineer
- Invests 10-20% of the teams resources on innovative projects (Calibration of risk scores, utilizing content based signals and deep learned models to identify money-scams, and discrimination)
- Invests 20% of the teams capacity and pushes partners to invest in building things right (redesign of our offline prediction pipeline for improved modeling velocity, better handshake of signals between partners)
- Leads with empathy, fosters a strong sense of inclusion for every team member, executes on projects with a sense of urgency, and spends significant time coaching engineers

Staff Engineer, ML, Ads AI, July 2020 - May 2021

Led the response prediction efforts for video-ads using a variety of behavioral and content based signals (wide and deep models)
Redesigned the calibration pipeline to be model agnostic and scalable to accommodate different verticals and dimensions of modeling
Redesigned and revamped the offline response prediction pipeline to improve modeling velocity and efficiency

Sr Software Engineer, ML, Learning AI, Nov 2015 - July 2020

[Recommendations for LinkedIn Learning] Built several key components of the course-recommendation pipeline: cold-start recommendations, supervised models using gradient boosted trees, online REST end-point to serve recommendations, end-to-end testing of offline and online pipelines and A/B testing.
[Skill tagging for Courses and Videos]: Built course to skill and video to skill taggers using semi-supervised modeling approaches.

Box

Software Engineer, ML, Nov 2013 - Nov 2015

Built Machine Learned models to identify sensitive documents hosted on the platform by customers.

Education

PhD, Electrical and Computer Engineering, Purdue University
Jan 2008 - Dec 2013

Areas: Information Retrieval, Data Mining, Topic modeling, Language modeling, Mining of Software Repositories (Applying ML/Data Mining technique to Software Engineering problems)

MS, Computer Science and Engineering, IIT Madras
Jan 2004 - May 2006

Areas: Texture analysis, Shape from Texture, Image Processing, Computer Vision

Recent Publications (Post PhD)

Workshops
- "Video to Skill Tagging using Transcripts under Weak Supervision", Zhe Cui, Shivani Rao, NeurIPS [workshop](#) on Learning with Limited Labeled Data.
- "Learning to be relevant, Course Recommendations @ LinkedIn Learning" Shivani Rao, Advancing Data with Education, Workshop at KDD 2017. See the talk video [here](#)

Conferences
"Learning to be Relevant, Evolution of a Course Recommendation System", The 28th ACM International Conference on Information and Knowledge Management (CIKM), Nov 3-7th, 2019, Beijing, China.

Journals
Retrospective paper on [Retrieval from software libraries for bug localization: A comparative study of generic and composite text models - A Retrospective](#) was published in ACM Software Engineering Notes in July 2021.

Blog Posts
[Trends in AI for Online Education: Recommending Micro-content for Micro-learning](#), Jan 2018
[Personalized Recommendations in LinkedIn Learning](#), Dec 2016

Patents

[Feature generation pipeline for machine learning](#) 2020
[Machine learning for associating skills with content](#) 2020
[Cluster-based collaborative filtering](#) 2020
[Ranking Carousels of Online Recommendations of Video](#)s 2018
[Method and system for implementing machine learning analysis of documents](#) 2016

Talks

- **Technical** - Organized and presented at the KDD Workshop on Advancing Education with Data, Canada 2017, "Learning to be relevant", Evolution of Course Recommendation System at CIKM, China, 2019
- **Local meetups** - Modeling and Prediction for Online Education at Bay Area Learning Design and Technology Meetup, 2019, AI for online education - BayLAN March 2019, Data Science Innovation in e-learning 2017,
- **Grace Hopper Celebration of Women in Computing** - Tagging Videos with Skills under weak supervision 2018, "Learning to be relevant" 2017, Panel discussion on "Apache Spark" 2015
- **Career Talks** - "How to break into data science industry" at PowerToFly Aug 2019, "Machine Learning in Practice" at University of SF, Data Science Meetup Oct 2018
- **Women in Tech** - Women in Machine Learning Dinner, RE-WORK, 2018, Girl Geek Dinners 2018, Women in Data Science Lighting Series AirBnB 2016

Outreach

- Program Committee Member - Automated Software Engineering (2021-2022), Mining of Software Repositories (2018), ICPC Research Track (2017), ICSME Tools (2015)
- Organizing Committee - KDD Workshop on Advancing Data with Education 2017
- Women-in-Tech engagementsCo-chair of tracks at Grace Hopper Celebration of Women in Computing, Anita Borg Institute
    - DataScience Track 2020-2021, Grace Hopper Celebration of Women in Computing
    - AI Track, 2016-2019, Grace Hopper Celebration of Women in Computing
  - Women in Tech internal development chair, Box, 2015