MOHAMMAD RASHID

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RESEARCH INTERESTS

Online Auctions, Multi Armed Bandits, Experiment Design

EDUCATION

PhD. Marketing, University of Washington, GPA: 3.9/4.0 Sep. 2024 - Exp. Jun. 2029

- Minor in **Computer Science**

M.Sc. Applied Mathematical Sciences, Sharif University of Technology Sep. 2021 - Aug. 2023

B.S. Mathematical Sciences, Sharif University of Technology Sep. 2016 - Feb. 2021

PUBLICATIONS

- Rashid, Mohammad, Omid Rafieian, and Soheil Ghili. "Auctions Meet Bandits: An Empirical Analysis.", 2025, *Under Review*
- Rashid, Mohammad, Elahe Ghasemi, and Javad B. Ebrahimi. "Entropic Weighted Rank Function." In 10th Iran Workshop on Communication and Information Theory (IWCIT), 2022
- Fathi, Ali, Mohammad Rashid, Shayan Ranjbarzadeh, and Mojtaba Tefagh. "Multi-Feasibility Variable Selection.", 2021

EXPERIENCES

Research In Progress

- **Ad Load Design in Search Auctions**, Supervisor: Hema Yoganarasimhan Jan. 2025 - present

  We leverage a long term large-scale field experiment on an app store's search page that varies ad load for over five million users. We document heterogeneity in revenue-conversion tradeoff across queries and over time. Motivated by this heterogeneity, we design and deploy a dynamic ε-greedy policy that adapts ad load at the query level to maximize a weighted sum of revenue and conversion. We show that our policy pushes the Pareto frontier relative to static benchmarks. We provide evidences to show that the multi-objectives problem reduces to either revenue- or conversion-maximizing when allocating ad load at query level.

- **Auctions Meet Bandits**, Supervisors: Omid Rafieian & Soheil Ghili Sep. 2022 - Dec. 2024

  We utilize data from a leading mobile app store that places sponsored ads for keywords. The platform employs a Thompson Sampling algorithm within a second-price auction to learn quality scores and allocate a single sponsored position for each keyword. We empirically quantify the gains from optimizing exploration under the combined auction–bandit model and show that this problem differs substantially from the canonical bandit problem. We show that exploration can increase market thickness in second-price auctions.

Industry Experience

- Data Science Intern at Meesho Nov. 2023 - Sep. 2024

  Design and evaluation of supply-side experiments

- Data Scientist & Researcher at CafeBazaar Co. Apr. 2021 - Aug. 2024

  Exploring questions related to auctions such as implementing a reserve price model, optimizing the number of ads, estimating the cost imposed on users by ads, and developing a real-time bidding algorithm.

AWARDS & RECOGNITION

- Boeing Endowment at Excellence/Fellowship — Sep. 2024
- Member of Sharif Optimization and Applications Laboratory (SOAL) — Aug. 2021 - June. 2022
- Gold Medal in Sharif Optimizer 2021 Competition — 2021
- Silver medal in National Mathematical Olympiad — 2015