Farzin Ahmadi

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SUMMARY

Research scientist with expertise in optimization, machine learning, and data science. Experienced in developing large-scale decision support tools and applying advanced mathematical techniques to solve complex real-world problems. Skilled in programming, cross-functional collaboration, and communicating technical concepts to diverse audiences.

EDUCATION

Johns Hopkins University **Baltimore, MD**
Ph.D. in Civil and Systems Engineering *2019 - present*
M.Sc. in Systems Engineering

Sharif University of Technology **Tehran, Iran**
M.Eng. in Transportation Engineering *2016 - 2018*
B.Sc. in Civil Engineering, Brilliant Talented Student Award *2012 - 2016*

PROFESSIONAL EXPERIENCE

Intern - Research Assistant
CSAIL, Massachusetts Institute of Technology, Cambridge, MA *June 2024 - December 2024*

- Conceptualizing, developing, and numerically validating a generalized mathematical optimization framework to improve the performance of large-scale systems.

Research and Teaching Assistant
Johns Hopkins University, Baltimore, MD *August 2019 - present*

- Member of the renowned Johns Hopkins COVID-19 Dashboard and Johns Hopkins COVID-19 Resource Center.
- Mentored a team of four junior researchers to identify pathways for improving hospital operating room workflows.
- Developed new models to elicit decision-maker preferences in constrained environments with applications in cancer therapy and personalized nutrition.
- Published one and have five publications in the pipeline of leading journals in operations research and optimization, presented findings in 10 conferences.
- Developed and instructed the course “Healthcare System Engineering” to undergraduate engineering students.
- Served as teaching assistant for AI, data-science, and operations research courses for three years.
- Organized presentation sessions for invited researchers in healthcare operations for an international conference.

Project Manager
Kanoon Farhangi Amoozesh Ghalamchi, Tehran, Iran *March 2017 - March 2019*

- Regularly engaged with technical and business partners, senior management, and the board to share ideas, report project progression and findings.
- Managed and supervised an editorial and material translation team of more than 100 people resulting in numerous publications and online articles in the education industry.
- Served as project management and data curation for an educational online tool in Iran (https://WoW.kanoon.ir), generating more than 100000 users nationwide.

LEADERSHIP & ENGAGEMENT EXPERIENCE

President, Johns Hopkins University INFORMS Student Chapter

- Launched member acquisition campaigns, bringing up membership to more than 100 members across JHU.
- Collaborated with a group of fellow officers to increase member outreach and develop student-led presentations.
- Directly engaged with INFORMS leadership and provided presentations on growth and future ideas.

Columnist, ORMS Today

- Provided insights on mpox as a potential public health concern through a healthcare operations lens (Link).
- Invited to provide student perspectives on the role of artificial intelligence and operations research in detecting and mitigating disparities in preventive care and healthcare delivery (Link).

SELECT PUBLICATIONS

- Ganjkhanloo, F., **Ahmadi, F.**, Dong, E., Parker, F., Gardner, L., & Ghobadi, K. (2024). "Evolving patterns of COVID-19 mortality in US counties: A longitudinal study of healthcare, socioeconomic, and vaccination associations." PLOS Global Public Health, 4(9), e0003590.
- **Ahmadi, F.**, et al. "Leveraging Expert Knowledge to Guide Inverse Optimization: The Case of Nutritional Adherence." arXiv preprint arXiv:2011.03038. (Under Review at Management Science)
- Dong, E., Du, H., **Ahmadi, F.**, et al. "The Johns Hopkins University Center for Systems Science and Engineering COVID-19 Dashboard: data collection process, challenges faced, and lessons learned." The Lancet Infectious Diseases, 22(12), pp.e370-e376.

TECHNICAL SKILLS

- **Optimization:** Linear/Integer Programming, Stochastic Optimization, Robust Optimization, Large-Scale Optimization
- **Programming:** Python (scikit-learn, TensorFlow, PySpark, Pandas, NumPy), R, Julia, SQL, Java
- **Tools & Software:** Gurobi, CPLEX, Git, Tableau, Plotly-Dash
- **Machine Learning:** Supervised/Unsupervised Learning, Time Series Forecasting, Recommendation Systems, Large Language Model Deployment and Application
- **Data Analysis:** Statistical Analysis, Data Mining, Visualization

RELEVANT COURSEWORK

Advanced Optimization Methods, Machine Learning, Stochastic Processes, Algorithm Design, Large-Scale Optimization, Data Mining, Statistical Learning