# Jiayi Gu

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## EDUCATION

**Massachusetts Institute of Technology** | MS/PhD in **Operations Research** MS Expected May 2024
Advised by Professor Dimitris Bertsimas, Associate Dean for Business Analytics at MIT Sloan
Research interests: Multimodal AI, Machine Learning and Optimization for Social Good

**Northwestern University** | B.S. in **Industrial Engineering** | Minor in Global Health Studies June 2022
GPA: 3.96/4.00, Honors: Summa Cum Laude

## RELEVANT EXPERIENCES

***Research Assistant*** | **MIT Operations Research Center** Sept 2022 – Present

- Working on improving an AI framework that leverages multimodal data (text, image, tabular data) to assist in treatment response predictions and prescriptions
- Applying multimodal AI to identify victims of intimate partner violence in clinical settings (Collaborator: Brigham and Women's Hospital)

***Undergraduate Fellow*** | **Civic Consulting Alliance** Sept – Dec 2021

- Served on the team that facilitates the development and the implementation of Cook County's COVID-19 American Rescue Plan Act (ARPA) funds spending plan
- Analyzed quantitative survey results (with Excel) and qualitative survey results to identify prioritization in programs eligible for funding
- Developed presentation decks synthesizing survey results discussed in policy implementation team meetings
- Identified areas of policy overlap in 400+ initiatives proposed for funding consideration

***Industrial Engineer Intern*** | **Northwestern Center for Health Equity Transformation** June – Sept 2021

- Led meetings with researchers to identify bottlenecks in the biospecimen processing workflow of Northwestern University Feinberg School of Medicine's Pathology Core Research Biorepository
- Performed data cleaning and exploratory data analysis on datasets of processing times using Python
- Developed a data-driven discrete-event simulation model of the specimen processing workflow to model process improvement strategies and quantify their potential impact
- Formulated a range of strategies to reduce delays in specimen processing time by up to 63%

***Data Science Intern*** | **Northwestern University SONIC Research Group** Jan – Mar 2021

- Analyzed patterns in team formation activities from 50,000+ user data from a team-building platform
- Built simulation model of team formation process and ran scenarios to investigate the effect of limiting invitations to prior connections (and other variables) on team diversity (gender, skills, etc.)
- Developed R script to display team formation activities and team composition from the simulation

***System Analyst Intern*** | **Education Under Construction Consulting** June - Aug 2020

- Designed and expanded company website to include databases and booking applications
- Implemented management software solutions (e.g. Slack, Trello) for the team to collaborate remotely
- Gained insight on Agile Methodology through Sprint product development and Daily Scrums

***Research Assistant*** | **Northwestern University Center for Engineering and Health** Feb - April 2020

- Analyzed quantitative survey results from 200+ clinicians and patients to identify preferred policy to reduce the discard rate of donated kidneys
- Identified characteristics of clinicians and patients that influence their response to the policies
- Created visualizations and summaries of data for a research paper later published on *Clinical Transplantation*

## TECHNICAL SKILLS

**Data Analysis and Visualization** (R, Python, SQL, Tableau, Excel, ArcGIS)
**Optimization** (JuMP, AMPL) **Simulation Modelling** (Simio, @Risk) Programming (MATLAB, Command-line, GitHub)