

Wani Zhang

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EDUCATION

Carnegie Mellon University

Pittsburgh, PA

Bachelor of Science in Mathematical Sciences, Concentration in Operations Research and Statistics

May 2022

Minors in Computational Finance and Economics

GPA: 3.79/4.0

Dean's List, High Honors: Spring 2020, Spring 2021, **Dean's List:** Fall 2019, Fall 2020

Relevant Coursework: Matrices and Linear Transformations, Real Analysis, Discrete Math, Microeconomics, Macroeconomics, Economics and Data Science, Mathematical Finance, Discrete-Time Finance, Continuous-Time Finance, Probability Theory, Statistical Inference, Optimization for Business, Operations Research I & II, Operations Management, Mathematical Models for Consulting, Modern Regression, Fundamentals of Programming and Computer Science (ongoing), Probability Modeling (ongoing), Data Analysis (ongoing)

RESEARCH EXPERIENCE

Mathematical Sciences Department, Carnegie Mellon University

June 2021 – Present

Undergraduate Researcher under Professor David Offner

- Construct and implement mixed integer linear programming model in Gurobi Python for Community Data Roundtable to improve child welfare and mental health
- Analyze historical data to discover relationships among patients' needs, treatment, and the resulting improvement in the severity of those needs
- Maximize matchings between model's suggested treatment and actual treatment in the cases where improvement has been historically achieved
- Utilize discovered relationships to assign optimal treatments to future patients

COURSE PROJECTS

Operations Research II, Carnegie Mellon University

Oct. 2021 – Present

- Apply operations research methods, with team, to create a course scheduling model
- Develop and implement linear programming (LP) model in Python to minimize course scheduling conflicts and maximize availability of courses required for on-time graduation
- Transform course scheduling problem to independent set problem, where independent sets are non-conflicting courses
- Build and run greedy algorithm on simulated graph to assign courses to time slots and compare performance of greedy algorithm to that of LP model

Mathematical Models for Consulting, Carnegie Mellon University

Nov. 2021 – Present

- Formulate and implement optimization model in Gurobi Python to decide what video content to license for a fictional video streaming platform
- Utilize integer programming methods to maximize number of subscribers based on potential content and cost constraints

WORK EXPERIENCE

Mathematical Sciences Department, Carnegie Mellon University

Fall 2021, Spring 2022

Teaching Assistant for Professor David Handron

- Plan lessons for and run weekly recitations for Differential Equations course
- Clarify concepts with students in weekly office hours
- Provide 150+ students with feedback for and grade homeworks, quizzes, and exams

Dietrich College of Humanities and Social Sciences, Carnegie Mellon University

Fall 2020 – Present

Language Assistant for Professor Gang Liu

- Interact with 15+ Elementary Chinese I students one-on-one to improve speaking and writing skills through assigned exercises
- Provide students with feedback for and grade weekly recording and written assignments

Independent Math Tutor

Aug. 2018 – Present

- Teach students in subjects from elementary math to Calculus and standardized testing
- Explain concepts to and provide practice problems and learning material for students

HONORS AND AWARDS

Omicron Delta Epsilon Economics Honor Society, Carnegie Mellon University

Aug. 2021

- Represent the top 25% of the graduating class

2021 Quant Club Market Making Game, Sponsored by Goldman Sachs

May 2021

- Price Estimation Leg: 1st Place
- Trading Leg: 3rd Place

Dean's List, High Honors

Spring 2020, Spring 2021

Dean's List

Fall 2019, Fall 2020

Scholastic Art and Writing Awards

Spring 2019

- National Division: Gold Key Winner for Painting

Music Teachers National Association Piano Duet Competition

Spring 2017 and 2018

- National Division: Finalist
- Regional Division: 1st Place
- State Division: 1st Place

SKILLS

Computer: Python, Gurobi, R, LaTeX

Language: Fluent in Mandarin Chinese (speaking, reading, and writing)

ACTIVITIES

Asian Students Association (ASA), Carnegie Mellon University

Aug. 2020 – Present

Design Chair

- Design and paint booth panels for ASA booth for annual CMU Carnival
- Organize and assign roles to booth participants
- Participate in ASA activities including intramurals flag football and weekly meetings