

# Yun Xing

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University of Waterloo BMath Student

Combinatorics and Optimization Student, 3A standing

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Personal Site: <https://y39xing.github.io>

## Summary of Skills

### Proficient in:

- Python (NumPy & Pandas),
- R, MATLAB, C
- Spreadsheets (Excel) and macros
- Goggle doc, sheet, and slides

### Familiar with:

- HTML, JavaScript, LaTeX, Markdown
- MS Office Suite (Word, PowerPoints)

### Other skills:

- Exceptional communication skills developed through presentations as a model developer
- Good time management developed through working in multiple projects when working as a course assistant
- Solid finance knowledge learned from a project to analyze our competitors' financial status

## Education

### University of Waterloo

- Candidate for bachelor's degree of Mathematics in Combinatorics and Optimization
- Minor in Economics
- Strong in academics, having 92+ in all courses and 93+ in all math courses (4.0 in 4-scale GPA)
- Expected graduation in Spring 2025

### Relevant Courses

- **STAT 340 Stochastic Simulations**  
(Monte Carlo SIMs/Randomized sampling)
- **CO 250 Intro to Optimization**  
(Model problems/Optimize basic problems)
- **CS 234 Data Types and Structures**  
(Useful data structures/algorithms in Python)
- **STAT 341 Data Analysis** (this term)  
(Population statistical analysis/Predictions /High-quality data Visualizations in R)

## Hobbies

- Soccer and billiards
- City builder simulation games
- Animations and ACGN culture

## Work Experiences

### Economic Model Developer at Impossible Mining (2022.5 – 2022.8)

- Establish the economic model in Google Sheet for our deep sea mining plan, with input of mining vehicles' design parameters and output of expected revenues and project net present value
- Use macros to run Monte Carlo Simulations, Sensitivity study of parameters and Optimization of the model
- Use python (connected to Google Cloud Service) to accelerate these macros, improve about 80% in terms of time efficiency
- Analyze the financial status (Cash flow, balance, funding) of one of the main competitors The Metals Company (which is public)

### Course and Technical Support Assistant at UWaterloo (2021.9 – 2021.12)

- Design and edit course notes and course webpages in HTML
- Use Maple to create assignment and exam questions with algorithms to randomize numbers in questions
- Revise course materials in LaTeX, making them tidy and readable

### Business Analyst in Team Ansker (2019.4-2020.8)

(Ansker is the start-up business created by my classmates in high school. This project creates a web app for Q&A among students and is invited to attend SAGE business competitions and won the championship in SAGE China.)

- Collect users' data from background of our App and questionnaires
- Write reports based on the data to provide users' portrait
- Give business suggestions in weekly meetings based on the reports

## Major Course Projects

### Graph Theory Algorithms in Python (MATH 239 Intro to Combinatorics)

- Use Python to realize an algorithm to find maximum matchings
- Successfully print the result in a readable way to all viewers

Link to this project on GitHub: <https://github.com/y39xing/XY-CONSTRUCTION-Algorithm>

### Card gacha simulation game in C (CS 136 Elementary Algorithm Design)

- Build a game with simple interface in C in order to simulate a card gacha game (that is to pick cards from a card pool)
- Use the program to run Monte Carlo simulations to discover the probability distribution of getting a specific card
- Add modules to personalize card names and probabilities for different users

Link to this project on GitHub: <https://github.com/y39xing/Gacha>

## Volunteering

- Guide at Shanghai Science and Technology Museum (2020)
- Librarian at Shanghai Hongkou District Library (2019)
- Museum docent at Shanghai Bank Museum (2019)