

# Charles Zhang

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## Education

### Macalester College

B.A. IN MATHEMATICS AND COMPUTER SCIENCE

Saint Paul, MN

Sep. 2019 - May. 2023

- **Major GPA** 4.0/4.0
- Charles J. Turck Presidential Honor Scholarship(Four-year scholarship)

## Skills

**Programming Skills** R, Java, Python, MATLAB, SQL, HTML, CSS, Markdown, TeX, COMSOL

## Experience

### Teaching Assistant

St. Paul, MN

Mathematics, Statistics and Computer Science Department, MACALESTER COLLEGE

Jan. 2020 - PRESENT

- Teaching Assistant(Preceptor) in STAT/COMP 112 Intro to the Data Science at Macalester College
- Helped students with realize multivariate visualization, data wrangling, interactivity, Leaflet, scraping data, Shiny APP, SQL, and machine learning by R(RStudio)

### Access & Research Services Student Aide

St. Paul, MN

DeWitt Wallace Library, MACALESTER COLLEGE

Sep. 2019 - Dec. 2019

- Provided assistance to patrons in regards to the Integrated Library System(ILS) and gave instructions for finding materials or research guide requested
- Processed shelve and sort, check-in and check-out process of library books and materials at the circulation desk

### Math Tutor

Jinan, China

SELF-EMPLOYED

Jun. 2019 - Aug. 2019

- Designed one-to-one study programs based on high school curriculum to help students excel in learning mathematics in China
- Developed a class timing and scheduling system by Python for students having classes in record

### Conference Member

Beijing, China

THE FIRST BRICS MATHEMATICS CONFERENCE

Jul, 2019 - Aug. 2019

- Was invited to Attend and listen series of worldwide cutting-edge mathematical lectures from the conference at Chinese Academy of Sciences
- Consulted mathematicians from five BRICS countries and made a manuscript

## Projects

### R for Data Science: Pizza Party

FINAL PROJECT FOR DATA SCIENCE COURSE AT MACALESTER COLLEGE

Oct. 2019 - Dec. 2019

- Using some data from TidyTuesday's Pizza Party data-set, I analyzed and created methods and visualizations for a pizzeria that everyone would like in New York

### Mathematical Modeling for Drone Light Show

HONORABLE MENTION OUT OF 938 TEAMS IN MATHEMATICAL CONTEST IN MODELING

Jan. 2018 - Feb. 2018

- Using MATLAB, I built models to determine the required number of Drones and every Drone's initial location during the process and applied mathematical methods to make sure the flight route of every Drone and the setting of drone

### Design and Optimization of Comb Drive Accelerator for High Frequency Oscillation

PUBLISHED IN MODERN MECHANICAL ENGINEERING VOL.8 No.1, FEBRUARY, 2018

Apr. 2017 - Feb. 2018

- This project is mentored by a doctor in UCLA and the final paper was published. In this work, using COMSOL and MATLAB, a finite element code was used for the design, optimization and visualization of a comb drive accelerator.

### Generalizations of Locus about Fixed Point and Fixed Line Moving to Magnify and Shrink

PUBLISHED IN MATHEMATICAL STUDY AND RESEARCH VOL 19, 2017

Sep. 2016 - Feb. 2017

- This Chinese geometrical paper is for mathematical Olympics competitions, generalized series of problems of locus by an elegant method and visualized by Geometer Sketchpad

## Honors

Dec, 2019 **Top 9**, The Mathematical Association of America-North Central Section(MAA-NCS) Team Contest

U.S.A

Feb, 2018 **Top 5%**, American Mathematics Competition(AMC12)

U.S.A.

Nov, 2017 **Honorable Mention**, Mathematical Contest in Modeling

U.S.A

Sep, 2017 **First Prize**, Chinese Mathematics League

China