Tianyi Ma

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EDUCATION

University of Rochester   **Rochester, NY**
Honor Bachelor of Science, Mathematics   *Anticipated 2022*
- Minor, Computer Science; Intro to Computer Science, Data Structure and Algorithms, Efficient Analysis of Algorithms, Computer Organization, Honor Calculus
- GPA: 3.24 out of 4.00; Major GPA: 3.64

SELECTED PROJECT EXPERIENCE

Google Play Store Data Analysis (ongoing)
- Predicting the number of installments of Google Play store items using machine learning, i.e. matplotlib, scipy, pandas, numpy, scikitlearn.

Text-based Shooting Game   **Nov 2020**
- Using Java, specifically the JavaFX package, implemented a simple text-based shooting game.

AUX   **Nov 2020**
- Learned React Native in 2 days and in a team of 3 built the front-end of an app that allows people to play musics to each other no matter where they are or what genre they play.

CoWalker   **Aug 2019**
- Created a small foot movement dataset and used python to train a feed-forward neural network that predicts if a person walks in abnormal gait that could be indications of musculoskeletal disorder.

Registrar Database   **Nov 2018**
- Using C, implemented my own relational "registrar" database system.

String Checker   **Sept 2018**
- Using C, implemented DFA, NFA so that they recognize specific string patterns.

Calculator   **Oct 2018**
- Using C, implemented two arithmetic expression parsers that renders the same result when being fed with an expression and evaluating the generated parse tree.

RouteFind   **March 2017**
- Using Java, designed a program that maps respectively the streets of University of Rochester, Monroe county, NYC and gives a highlighted animation of the shortest path between any two given points on the map.

Lob Pong Game   **Dec 2016**
- Using Java, implemented Lob Pong Game with various levels of difficulties, a user-friendly graphic interface, animations and background music.

Fireworks   **Nov 2016**
- Using Java, implemented a firework animation graphic interface that display the trajectory of various firework after launch and the explosion of fireworks.

Golf Game   **Oct 2016**
- Using Java, implemented a text-based golf game where the user need to complete a course with 18 holes and can use different clubs.

RESEARCH/WORK EXPERIENCE

University of Rochester   **Rochester, NY**
Research Assistant   *May 2020 – present*

- Working with Prof. Alex Iosevich from the math department on estimating the size of $2A^2$ for a multiplicative subgroup A of certain size of a finite group F_q for prime q. Wrote a Python program that tested the hypothesis on primes of size up to 1,000,000.
- Estimating the size of $2A^2$ for the Gaussian Integer of a finite group $F_q[i]$ of size q^2. Wrote a program that tested the hypothesis on primes of size up to 1,000 and using mathematical properties and algorithm analysis skills improved the speed of the program 700%.

Advanced Institute of Information Technology, Peking University   **Hangzhou, China**
Algorithm Intern   *August 2019 – December 2019*

- In a small team of 3, cleansed, summarized and statistically presented Chinese natural language data on government customer service and landed a jointed project between the government and the company.
- In a team of 12 people, attended, read and presented papers on natural language processing for determining future projects of the company.
- Learned the theory of deep learning by reading a book in less than a month and presented the ideas and important models to the whole team.
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CAMPUS LEADERSHIP ACTIVITIES

University of Rochester, UR Photography   **Rochester, NY**
Event Squad Member   *September 2016 – present*

- Took 500+ photos for 30+ performances, festivals, talks and sports events on campus for both individual organizations and Campus Times.

SKILLS

- Proficient in Java, C, Python, some experience on JavaScript/CSS SciPy, Pytorch, git, Linux
- Language: fluent in both English and Chinese