

# Tianchi (Maverick) Mo

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## ➤ EDUCATION

**Ph.D. Candidate. Computer Science. Stony Brook University.** Aug 2018 - Present.

GPA: 4.0/4.0. Main Courses: Data Science Fundamentals, Analysis of Algorithms, Theory of Database Systems, Computational Geometry, and Machine Learning.

**Research Interests:** Algorithms and data structures, especially adaptive data structures and machine-learning-advised and heuristic algorithms.

**Master. Software Engineering. Central South University (China).** Sep 2014 - Jun 2017.

GPA: 3.9/4.0.

**Bachelor. Software Engineering. Central South University.** Sep 2010 - Jun 2014.

GPA: 91.04/100.

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## ➤ SELECTED PUBLICATIONS

**Mitigating False Positives in Filters: to Adapt or to Cache?.** Symposium on Algorithmic Principles of Computer Systems (APOCS). Society for Industrial and Applied Mathematics, 2021. (This is a theoretical paper. Authors were sorted alphabetically. I am the corresponding author and presenter. See the presentation [here](#).)

**The Searching Ranking Model Based on the Sharing and Recommending Mechanism of Social Network.** Advances in Services Computing: 9th Asia-Pacific Services Computing Conference, APSCC 2015. (The first author is my advisor. I am the second but primary author. It was traditional in China to let the advisor be the first author.)

**Identifying Users' Interest Similarity Based on Clustering Hot Vertices in Social Networks.** 8th Asia-Pacific Services Computing Conference, APSCC 2014. (First author.)

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## ➤ CURRENTLY WORKING ON

**Adaptive Filter: Implementation and Analysis (2021 - Present).** Given a set  $S$  and an arbitrary item  $x$ , a filter is a compact, approximate data structure answering “Is  $x \in S$ ?” with very few false positives. This project aims to extend our previous work “Mitigating False Positives in Filters: to Adapt or to Cache?” We are proposing an implementation of the broom filter, an adaptive filter only existing in theory in the past, and comparing it with other adaptive filters.

**Machine-learning-advised/Heuristic Green Paging and Parallel Paging Algorithm (2022 - Present).** Modern computer systems can be highly energy-consuming and often have multiple processors sharing fast memory (e.g., CPU cache or RAM). We aim to use machine learning advice and heuristic algorithms to (1) reduce the energy consumption of fast memory and (2) partition the fast memory intelligently among processors to increase processing efficiency.

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## ➤ SKILLS

**Programming Language:** Familiarity with Python, Java, C/C++, MATLAB, and SQL.

**Computer Science:** Familiarity with algorithms, data structures, and basic machine learning tools.

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## ➤ WORKING EXPERIENCE

### **Teaching Assistant (Stony Brook University):**

Graduate course: CSE 548 Analysis of Algorithms (Fall 2023).

Undergraduate course: CSE 373 Analysis of Algorithms (Fall 2018),

CSE 216 Programming Abstractions (Spring 2019 & Spring 2023),

CSE 150 Foundations of Computer Science: Honors (Fall 2019).

### **Research Assistant (Stony Brook University):**

Advised by Professor Michael A. Bender on computer theory, adaptive data structures, and Machine-learning-advised algorithms. Fall 2019 - Fall 2022.

### **Website Developer:**

Developed **the online teaching resources management platform** and **the online research information management system** for the School of Economy and Management of the Changsha University of Science & Technology. Advised by Professor Hongxiao Fei of Central South University. Aug 2012 - May 2013.