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**MICHAEL (YAO) RAO**  
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## **EDUCATION**

*Stony Brook University, Stony Brook, NY*

September 2012 – December 2016

- Double Major in Computer Science and Applied Mathematics and Statistics      Major GPA: 3.14
- Honors: Dean's List      Fall 2013, Spring 2013, Fall 2014, Spring 2014

*Stuyvesant High School, New York, NY*

September 2008 – June 2012

*College Coursework:* Software Engineering, Systems Fundamentals, Analysis of Algorithms, Wireless and Mobile Networking, Artificial Intelligence, Computer Networks, Databases, Calculus I-IV

## **SKILLS**

- Proficient in Java, C, and UNIX
- Experienced in JavaScript, JQuery, HTML, MySQL, PHP, MIPS, and Python programming
- Strong presentation skills and organization leadership

## **EXPERIENCE AND PROJECTS**

<b>Sole Developer</b>	<b>MapReduce</b>	<b>2016</b>
	• Implemented multithreaded data analysis program in C based on the MapReduce programming model	
	• Exploited bounded buffer, limited threads, mutual exclusion and semaphores to vary speed and performance of program and to improve proficiency of multithreading and memory concepts	
<b>Sole Developer</b>	<b>UNIX Shell</b>	<b>2016</b>
	• Implemented a custom UNIX shell in C without using the <i>termios</i> library or <i>system</i> functions	
	• Enhanced Bash's file redirections and pipelines to improve performance and execution of commands	
	• Substituted built-in signals and controls with custom Job Control and Signal Handlers	
	• Incorporated custom features such as recognizing and utilizing git repositories as well as storing process IDs and retrieving process IDs to improve understanding of file management and multi-processing	
<b>Sole Developer</b>	<b>Dynamic Memory Allocator</b>	<b>2016</b>
	• Utilized Explicit Free List to replicate the functionalities of <i>malloc</i> , <i>realloc</i> and <i>free</i> in C	
	• Implemented Best-Fit, FILO, FIFO Free Lists to vary the performance of the program and to improve knowledge of Linked List and memory management in C	
<b>Lead Programmer</b>	<b>SPComics (Web Application)</b>	<b>2015</b>
	• Directed a team of four in developing a comic web application for content creation, reading and sharing	
	• Created Software Design Document and Software Requirement Specifications with UML Class, Use-Case, and Sequence diagrams as a project foundation	
	• Designed and developed Comic Page and Reading Page that monitors the user's reading and comic history using JavaScript and JQuery to optimize user experience	
	• Implemented Comic Creation Page with savable tools in JavaScript, JQuery and Google Datastore	
<b>Sole Developer</b>	<b>Journey Through Europe</b>	<b>2014</b>
	• Created UML Diagrams as framework and foundation for the board game Journey Through Europe	
	• Designed and implemented Graphic User Interface with interactive map of Europe in Java and HTML	
	• Developed AI with customized Dijkstra's Algorithm that finishes the game in minimal steps	
<b>Web Designer</b>	<b>Temple University</b>	<b>2014</b>
	• Designed and implemented a basic website for informative purposes with Adobe Dreamweaver, HTML, and CSS for Dr. Hai-Lung Dai Group	
<b>Science Intern</b>	<b>Columbia University</b>	<b>2013</b>
	• Implemented Monte Carlo algorithm to construct Brownian motion model using MatLab for Professor Tony F. Heinz Group	

## **HOBBIES**

Bodybuilding, Martial Arts, Philosophy, Classical Music, Violin, Basketball, Ping Pong, Billiard