

# Zhuoqun Song

[www.linkedin.com/in/zhuoquns](http://www.linkedin.com/in/zhuoquns) | (321) 947-6424 | christophersong32@Gmail.com | [www.zhuoquns.com](http://www.zhuoquns.com)

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## Education

### University at Buffalo, Buffalo, NY

Anticipated Graduation 12/24

B.S. Computer Science, GPA 3.97

Java, C, Python, Scala, JavaScript, HTML, CSS, Assembly

Object-Oriented Programming, Data Structures and Algorithms, Systems Programming, Artificial Intelligence

## Experiences

### Head Teaching Assistant

01/23 - Present

University at Buffalo

Buffalo, NY

- Managed a diverse team of 34 TAs, effectively oversaw productive operations and high levels of student engagement
- Supervised the grading process as the Head Teaching Assistant, ensuring accuracy, consistency, and timely feedback
- Led lab sessions, held office hours, and provided support to students on key topics of Object Oriented Programming
- Offered clear, concise explanations of debugging steps, increasing students' understanding of the root causes of errors
- Contributed with other TAs to the refinement of grading procedures, enhancing the quality and fairness of evaluation
- Yielded a 23% increase in students' grades compared to cohort's performance through effective teaching strategies in lab

### Research Assistant

08/20 - 05/21

Purdue University

West Lafayette, IN

- Researched the usability and user experience of Meta Quest virtual reality systems regarding interpersonal relationships
- Collaborated with researchers to understand project requirements and translate them into effective UI and UX designs
- Analyzed user behavioral data to identify valuable patterns of user engagement and responses within the VR simulations
- Developed and maintained research databases, ensuring accurate and organized storage of data
- Validated and analyzed incoming data for information accuracy and integrity while independently addressing concerns

## Projects

### UB SEDS Rocket Avionics Flight Computer

- Implemented an advanced algorithmic Flight Management System for flight controls, recoveries, and minimal deviations
- Achieved 74% decrease in recovery time compared to past implementation, highlighting the effectiveness of the new FMS
- Collaborated with cross-functional teams to synchronize the FMS with critical systems, ensuring a smooth integration
- Led a team in designing a comprehensive flight data system, allowing for post-flight analysis and optimization
- Secured top-ten position out of 200 total teams for Intercollegiate Rocket Engineering Competition 2023 10,000ft category

### Dynamic Memory Allocator

- Developed a highly efficient dynamic memory allocator to supplant the standard heap memory functions in a Unix process
- Optimized memory management by implementing custom replacements for malloc(), calloc(), realloc(), and free()
- Resulted in notable improvements in memory allocation performance, leading to enhancements in overall system efficiency
- Conducted rigorous and meticulous testing and debugging, ensuring every aspect was thoroughly examined
- Guaranteed its stability and compatibility, resulting in a functioning system that supports demanding applications like Vim

### Zhuoquns.com Personal Website

- Designed and developed a responsive website using HTML5, CSS3, JavaScript, and Git for version control
- Utilized media queries and a flexible grid system to ensure a seamless UI with a responsive design
- Employed advanced search engine optimization techniques by strategically incorporating pertinent keywords and metadata
- Conducted testing across multiple browsers and devices to ensure cross-browser compatibility and smooth functionality