Zhuoqun Song

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Education

University at Buffalo, Buffalo, NY **Expected Graduation December 2024**
B.S. Computer Science, GPA 3.97
Java, C, Python, Scala, JavaScript, HTML, CSS, Assembly
OOP, Data Structures and Algorithms, Systems Programming, Discrete Mathematics, Artificial Inteligence

Experiences

Head Teaching Assistant **January 2023 - 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 **August 2020 - May 2021**
Purdue University West Lafayette, IN

- Researched the usability and user experience of virtual reality systems in simulations of 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 maintenanced of 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 **July 2023**

- Implemented advanced algorithmic Flight Management System for flight controls, recoveries, and minimal deviations
- Achieved 74% decrease 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 **March 2023**

- 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 **August 2023**

- Designed and developed a responsive website using HTML5, CSS3, and JavaScript and Git for version control
- Utilized media queries and 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