

Zhuoqun Song

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Education

University at Buffalo, Buffalo, NY

B.S. Computer Science, GPA 3.97

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

OOP, DSA, Systems Programming, Discrete Mathematics

Expected Graduation Fall 2024

Experiences

Head Teaching Assistant

University at Buffalo

Spring 2023 to Present

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 Lead Grading Teaching Assistant, ensuring accuracy, consistency, and timely feedback
- Collaborated with course instructors to address grading-related concerns, clarify expectations, and resolve grading discrepancies
- Led lab sessions, held office hours and provided support to students on key topics of Object Oriented Programming
- Offered clear and concise explanations of debugging steps, increasing students' understanding of the root causes of their problems
- Contributed with other TAs to the refinement of grading procedures, enhancing the quality and fairness of evaluating students
- Yielded a 23% increase in students' average grades compared to cohort's performance through effective teaching strategies in lab

Research Assistant

Purdue University

Fall 2020 to Summer 2021

West Lafayette, IN

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

Projects

UB SEDS Rocket Avionics Flight Computer

Summer 2023

- Implemented advanced algorithms in Flight Management System for flight controls, smooth recoveries, and minimal deviations
- Engineered precise instructions into the FMS, enabling automated deployment of recovery systems in optimal situations
- Achieved 74% decrease recovery time compared to previous implementation, highlighting the effectiveness of the revamped FMS
- Collaborated seamlessly with cross-functional teams to synchronize the FMS with critical systems, ensuring a smooth integration
- Led cross-functional team in designing a comprehensive flight data system, allowing for post-flight analysis and optimization
- Secured top-five position out of 200 total competitors in Intercollegiate Rocket Engineering Competition 2023 10,000ft category

Dynamic Memory Allocator

Spring 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 the standard 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 even supports demanding applications like Vim

Zhuoquns.com Personal Website

Summer 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 adapting to different screen sizes
- Gathered and organized project details, case studies, and personal achievements to effectively showcase skills and experiences
- Employed advanced search engine optimization techniques by strategically incorporating pertinent keywords and metadata
- Conducted thorough testing across multiple browsers and devices to ensure cross-browser compatibility and smooth functionality
- Resolved any discrepancies or inconsistencies in the website's appearance and functionality, ensuring a seamless UI