Bryan Zhu

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Education

University of California, San Diego   *3.98 GPA*
Bachelor of Science Computer Engineering (B.S.)   *Expected Grad. Jun 2025*
- **Courses:** Data Structures and Algorithms · Object Oriented Programming · Operating Systems · Computer Architecture · Software Development · Assembly · Digital Design · Signal Analysis · Computer Graphics · GPU Parallel Computing · Data Science · Machine Learning
- **Groups:** President of the Intermission Orchestra @ UC San Diego

Skills

Languages	Python · JavaScript · HTML/CSS · Java · C++ · C · Go · SystemVerilog
Tools	Git · GitHub · Linux/Bash · AWS · Terraform · Pandas · Scikit-Learn · Keras · ReactJS · Postman · GDB · CUDA · JUnit · Numpy · TensorFlow · OpenGL · OpenCL · NodeJS· Docker · ModelSim · Quartus · Unreal Engine 5
Soft Skills	Motivated Learning · Proactiveness · Enthusiasm · Creative Problem Solving · Open-Mindedness · Communication · Collaboration

Experience

Software Engineer Intern   *San Jose, CA*
Kognitos   *Aug 2024 - Present*
- Developed internal tool with Python to process registries and develop NoSQL database for analysis and categorization of platform user language interface through GPT-4o LLM analysis to standardize invocation of internal procedures.
- Analyzing AWS platform performance metrics through DataDog to produce visualizations of performance benchmarking for generative AI backend and building AWS Lambda in Go for request scheduling/handling.

Software Developer Intern (Media Programming)   *San Diego, CA*
Qualcomm Institute - UC San Diego Division of Calit2   *Jul 2023 - Aug 2024*
- Led the development of a virtual reality experience using Space3D audio plugins, achieving fully spatialized audio and real-time volumetric 3D video capture in Unreal Engine 5 with Azure Kinects.
- Built demos with ray-traced audio spatialization algorithms in C++ with support of 16 channels over 16 speakers.
- Developed Pure Data patch to integrate Space3D audio spatialization libraries in C++ and control DMX lighting through MIDI input via OSC.

Heterogeneous Computing Research Assistant   *San Diego, CA*
Kastner Research Group @ UC San Diego   *Mar 2024 - Jun 2024*
- Developed a parallelized raytracing program with Blinn-Phong shading and recursive reflections, achieving a 200% speedup through OpenCL kernel on CPU and 500% speedup through OpenCL kernel on GPU.
- Implemented a parallelized convolutional layer in CUDA C based on Convolutional Neural Network (AlexNet) architecture, achieving a 400% speedup.

Information Technologies Intern   *Palo Alto, CA*
Evommune Inc.   *Jun 2022 - Aug 2022*
- Implemented automated device management with Mosyle MDM, reducing deployment time by 90% and saving $200+ per employee.
- Streamlined and transformed paper-based onboarding processes through automated workflows, allowing for efficient onboarding training and cutting down on onboarding time for new hires by 50%.

Projects

"Successorator" Task Magement App, Lead Programmer
- Collaborated with a team of 5 to develop an Android app to allow the setting of daily, weekly, monthly, and yearly tasks grouped for organization, aiming to promote user productivity.
- Led a team to develop the Successorator Reminder App using the Android SDK with Java backend, achieving high user satisfaction through rigorous unit testing with JUnit.
- Facilitated Agile process facilitated through GitHub Actions for Continuous Integration, frequent code reviews, test-driven development, and employed various design patterns for modularity of code, such as Strategy, Builder, MVP architecture, etc. to ensure a smooth scrum environment.

UCSD Dining Recommendation App, Full-Stack Developer
- Worked with 4 members of Association for Computing Machinery at UCSD to develop web-app with MERN stack to web scrape school dining hall data and recommend food based on user preferences saved in 1000+ JSON entry MongoDB databases.
- Architected frontend design and backend functionality for User Creation and Log-In through MongoDB and Mongoose for database management, Express.js for REST API, and React.js for frontend.
- Organized meetings, tracked and managed team progress through Trello, and facilitated stand-up meetings as project scrum master in Agile process.