

Triston Babers

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EDUCATION

University of California San Diego

Bachelor of Science in Computer Engineering

- **GPA:** 3.73

La Jolla, CA

Sep. 2020 – June 2024

PROJECTS

RLC Solver | *HTML, CSS, Javascript, Math.js, PHP, C++*

June 2024 – August 2024

- Developed a full stack web application using PHP for the REST API and C++ as the backend
- Constructed an algorithm that delays computation until the front-end to reduce network requests
- Visualized the calculation of the results to increase educational value

Relational SQL Database | *C++, Git*

Apr. 2024 – June 2024

- Developed a relational database that emulates the behavior of MySQL from scratch in C++
- Designed flexible command-parsing interfaces to streamline creation, integration, and dispatch of new commands
- Utilized CI/CD pipelines and automated testing with Git to quickly integrate and deploy new features
- Peer-programmed with 2 other developers to catch bugs early

Floating Point Convertor | *SystemVerilog*

Oct. 2023 – Dec. 2023

- Created a hardware description that converts any 32-bit value into an IEEE-754 floating-point number
- Allowed the precision of the output to automatically adjust to the display size to increase flexibility
- Designed automatic testing modules to ensure all edge cases are handled appropriately

Custom Pipelined Processor | *SystemVerilog, Python*

Sep. 2023 – Dec. 2023

- Designed a pipelined RISC processor in System Verilog that executes a custom ISA.
- Wrote an assembler in Python to automatically convert instructions into binary, as well as provide error checking
- Developed programs for the processor to execute which can encrypt and decrypt sequences of bits

Recipe Manager Application | *Javascript, Git*

Sep. 2022 – Dec. 2022

- Worked on a team of 10 developers to build a CRUD web app
- Organized team meetings and presented slideshows to keep the team on track
- Setup automatic linting and validation using GitHub Actions to improve development efficiency
- Adhered to the Agile workflow by setting weekly sprint goals and iterating upon the design

EXTRACURRICULAR ACTIVITIES

Student Cluster Competition 23 | *PyTorch, OpenMPI, Docker*

June 2023 – November 2023

- Optimized High-Performance Linpack for a multi-node, multi-GPU supercomputing cluster
- Diagnosed and solved problems in order to achieve efficient runtimes
- Collaborated with the team to earn 3rd place internationally

TECHNICAL SKILLS

Languages: Bash, C, C++, Cuda, Java, Python, SQL (MySQL), JavaScript, HTML, CSS, SystemVerilog

Frameworks: JUnit, Node.js, Pytorch, React

Developer Tools: CMake, Docker, Eclipse, Git, MongoDB, Putty, Valgrind, VS Code, Visual Studio

Libraries: Boost, Math.js