Shashank Iswara

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EDUCATION

The University of Texas at Austin, Austin, TX *Graduation: December 2024*

Bachelor of Science, Computer Science | Certificate in Quantum Information

- GPA: *4.00/4.00 (University Honors)*
- Relevant Coursework: *Computer Architecture, Operating Systems, Data Structures, Advanced Statistics, Quantum Computing*, Graphics Honors, Virtualization, Statistical Machine Learning

SKILLS

- **Programming Languages:** Python, C, C++, Java, JavaScript, TypeScript, HTML, CSS, SQL
- **Quantum Information:** Qiskit, Q#, Compilers, Variational Algorithms, Error Correction, Security
- **Machine Learning:** PyTorch, SciPy, TensorFlow, NumPy, Pandas, OpenCV
- **Software Engineering:** Linux, Node.JS, Docker, AWS, Git, PySpark, GDB/Debugging
- **Graphics:** WebGL, OpenGL, GLSL, Graphics Pipeline, Physical Simulation

EXPERIENCE

Applied Research Laboratories, Center for Quantum Research May 2023 – August 2023

Quantum Software Engineering Intern

- Implemented an ML model to optimize a parameterized atomic phase estimation sensor
- Achieved 2x improvements in sensor accuracy over previous methods
- Technologies: SciPy, Qiskit-Runtime, Python, Multi-threading, Quantum Computing

State Farm May 2022 – August 2022

Software Engineering Intern

- Designed and implemented an end-to-end data pipeline to automate the data pass through to the P&C team, increasing efficiency by eliminating the need for two hours of daily manual data processing
- Technologies: AWS (Lambda, S3, Glue, CloudWatch, IAM), Terraform, Python, JavaScript

FRI Program January 2022 – December 2023

Student Researcher in Quantum Computing

- Wrote python scripts to simulate and enable study of quantum-secure security protocols (BB84, E91)
- Created a compiler to translate virtual quantum circuits to arbitrary physical hardware and apply optimizations to increase circuit efficacy

Teaching Assistant January 2023 – Present

Honors Data Structures & Computer Architecture

- Taught C, Linux, and ARM architecture to 200+ students
- Taught advanced Data Structures in Java to UT Austin computer science honors students

PROJECTS

- **Atomic Visualizations:** an atomic orbital visualizer that efficiently samples the Schrödinger equation to compute electron positions in atomic orbitals, written in TypeScript using WebGL (available on GitHub)
- **Raytraced Animation Engine:** a multithreaded raytraced animation engine written in C++. Won a speed performance contest in university Honors Graphics course
- **The Drunken Qubit:** a quantum game written using Qiskit that uses different quantum walks to create unique superpositions for the player to guess

LEADERSHIP & COMMUNITY INVOLVEMENT

Quantum Computing Peer Mentor December 2022 – Present

- Selected to be an educator in a quantum information course
- Duties include conducting office hours, supervising student research projects, creating instructional tools, and grading assignments