

Ridwan S. Haque

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Education

Georgia Institute of Technology | Atlanta, GA

Bachelor of Science in Computer Engineering, GPA 3.34

Aug 2023 – Present

Expected Graduation, May 2027

Skills

Programming/Platforms: Java, Python, C, C++, JavaScript, HTML, CSS, VHDL, Verilog, RISC-V Assembly, Linux, Ubuntu/WSL, MATLAB

Hardware: Raspberry Pi, ARM mbed microcontroller, FPGAs, oscilloscope, logic analyzer, multimeter

Software: ModelSim, Intel Altera Quartus Prime, GTKWave, NI LabVIEW, EasyEDA, Autodesk Inventor, Airtable, Softr, GitHub

Experience

Georgia Tech Vertically Integrated Projects Research Program | Atlanta, Georgia

Jan 2025 – Present

Biomechanics and ML Researcher / Robotic Human Augmentation

Develops ML-driven wearable robotics with EMG/mechanical sensors to restore mobility for individuals with disabilities

- Upgraded PCB architecture and power delivery via precision circuit routing, optimizing signal integrity for hip-exoskeleton
- Configured 7 IMUs for sensor ablation experiments on an engineered hip exoskeleton to analyze balance augmentation on humans
- Engineered a hierarchical data structure, 4 data visualization MATLAB functions, and a GUI for TCN machine learning model training, organizing and analyzing biomechanical data from 24 CAREN pilots across variable platform perturbation conditions

Georgia Tech Office of Commercialization | Atlanta, Georgia

Aug 2024 – Present

Project Manager and IT Support / Central Office

Bridges academic research and industry via tech transfer, IP licensing, and startup incubation (VentureLab/CREATE-X/Quadrant-i).

- Optimized database systems with Airtable by designing a custom GUI, enabling employees to efficiently view and manage their assigned tasks, track deadlines, and collaborate, resulting in a 60% increase in task completion rates
- Programmed JavaScript automations for the department's hiring tracking processes, enabling application tracking, record organization, and a GUI for aggregating applicant form fields to generate 8 data metrics for departmental insights
- Delivered technical AV support for 5 conference presentations and trained 10 employees on Airtable database implementation

Nitriam Design | Orlando, Florida

June 2024 – Jan 2025

Product Designer / Manufacturing

Delivers 3D printing & CAD/CAM prototyping for product development, functional prototypes, and custom manufacturing.

- Managing contract projects for the manufacturing startup, including client meetings to discuss project timelines and budgeting
- Designed 10 vehicles and an RC Aircraft for 3D printing and rendering high-quality product visualizations for brands

University of Georgia CURO Research Program | Athens, Georgia

Aug 2023 – June 2024

Computational Astrophysics Researcher / Department of Physics and Astronomy

Designing a 3D virtual reality system optimized for Meta Quest 3D to enrich the UGA astronomy curriculum

- Programmed an interactive UI with Python, optimizing user control and navigation by 50%
- Integrated 10 NASA Visualization Tech Apps & Development resources and utilized observational research data for scripting
- Configured Git LFS with GitHub to track over 30 file versions, and share large simulation files remotely

Technical Projects

Retro Snake Game on ARM Mbed Microcontroller | Embedded Software Development

Spring 2025

Individual Project: Designed a classic Snake game on an ARM Mbed platform using C++ and budget hardware prototyping

- Integrated micro-LCD display, capacitive control buttons, and audio output on a breadboarded system for embedded gameplay
- Optimized game logic using C++ with linked-list data structures, enabling dynamic snake growth without memory reallocation overhead, efficient memory allocation for variable-length game objects, and real-time collision detection
- Developed and debugged custom I/O interfacing for reliable user input and real-time visual feedback, demonstrating practical embedded systems and circuit design skills

Downloads File Workflow Optimizer | Software Automation

Summer 2024

Individual Project: Developed a Python tool to automate Downloads folder organization by categorizing files into sorted directories

- Built scalable file organizer handling 49 file types across 6 categories (Documents/Video/Apps/etc.), with scalable architecture supporting instant updates for new formats and user-defined paths.
- Automated relocation of 500+ files/session with perfect accuracy, reducing manual sorting time by 90% through path handling

Relevant Coursework

Object Oriented Programming: Encapsulation & Abstraction; Inheritance & Polymorphism; GUI/Event-Driven Programming

Programming HW/SW Systems: C/RISC-V Assembly Integration; Heap/Stack Memory Management; Embedded Systems Design

Digital Hardware/System Design: FPGA-Based Logic Synthesis; Finite State Machine Implementation; Hardware-Software Co-Design

Computer Architecture: CPU Pipeline/Parallelism Optimization; Cache/Virtual Memory Systems; Energy-Aware HW/SW Co-Design

Circuit Analysis: DC/AC Circuit Simulation; Network Theorems (Thevenin/Norton); Frequency Response & Bode Plot Optimization