

# Irene Y. Tian

(650) 518-8908 | itian6@gatech.edu | [linkedin.com/in/irene-y-tian](https://www.linkedin.com/in/irene-y-tian) | <https://irene-y-tian.github.io> | US Citizen

## Education

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### Georgia Institute of Technology | Atlanta, GA

May 2027 (Expected)

B.S. in Electrical Engineering, GPA 4.00

Relevant Coursework: Digital Design, Circuit Analysis, Signal Processing, Programming HW/SW, Data Structures & Algorithms

### Monta Vista High School | Cupertino, CA

June 2024

GPA 4.00 (4.55 Weighted) / 4.00

## Skills

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**Programming:** Verilog, SystemVerilog, VHDL, C, C++, Python, MATLAB, Java, RISC-V, Linux, Git

**Electronics:** Cyclone V FPGA, Arduino, PCB Design, Op-Amps, Filters, ADCs

**CAD/Simulation Software:** Altium, Quartus Prime, Cadence Virtuoso, NI Multisim, LTSpice, LabVIEW, SolidWorks, Google Suite, Microsoft Office

**Equipment:** Oscilloscope, Multimeter, Logic Analyzer, Function Generator

## Experience

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### VIP Mechatronics and Motivation, Georgia Institute of Technology | Atlanta, GA

August 2025 – Present

#### Firmware and Electronics Lead

Atlanta, GA

- Implemented embedded firmware and cloud-based servers for remote operation of flexible PCBs in haptic devices.
- Developed AR/VR software integrating haptic devices into learning environments.
- Optimized fabrication through verification/validation studies; applied signal processing + ML to analyze EMG data.

### Haider Lab, Dept of Biomedical Engineering, Georgia Institute of Technology | Atlanta, GA

January 2025 – Present

#### Research Assistant

Atlanta, GA

- Developed MATLAB pipelines for preprocessing local field potential and video data in frequency/time domains, supporting studies of neural circuit mechanisms and deficits in mouse visual cortex.
- Designed custom PCB systems integrated with MATLAB interfaces to automate real-time data acquisition and control, improving experimental throughput by 33%.
- Built and validated sensor circuits (lick detectors, solenoid valves) ensuring precise timing/synchronization with visual stimuli.

## Technical Projects

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### PCB Keychain | HyTech Electrical Team

- Designed PCB in Altium with 555 timer and USB-C for Formula SAE Ready-to-Move light compliance.
- Learned to parse datasheets, select components, and implement practical flashing light circuit.

### SystemVerilog Calculator | SiliconJackets Digital Design

- Designed and implemented a 64-bit calculator in SystemVerilog with FSM-based control and SRAM integration.
- Created modular RTL and verified functionality with testbenches.

### VaxShield | Georgia Tech Grand Challenges | Team Member

- Designed and prototyped a compact low-power temperature regulating system using an ATmega328 microcontroller, IGBT, and Peltier modules for off-grid vaccine storage.
- Implemented closed-loop temperature control by programming ADC-based feedback from thermal sensors.
- Led circuit design and component selection to optimize power efficiency and thermal regulation.
- Selected as one of top 4 teams out of 40 for a \$700 prototype development grant based on technical merit and social impact.