Matthew Cargill

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Education

Georgia Institute of Technology, Atlanta, GA   *August 2023 - December 2026 (Expected*)
- Bachelor of Science in Electrical Engineering Candidate
- GPA 4.0/4.0 (to date)

Experience

Georgia Tech Research Institute (GTRI), Smyrna, GA   *August 2024 – Present*
Electrical Engineering Intern (Sensors and Electromagnetic Applications Lab)
- Performed RF-focused testing on spaceflight-critical hardware, ensuring system reliability
- Automated system-level electromagnetic compatibility (EMC) testing using PyVISA to control test instruments, optimizing data collection
- Developed a Python module controlling an RF power sensor with libusb, enabling Linux compatibility
- Automated test report generation using Python, HTML and JS, streamlining the data verification process

Ganz USA, Marietta, GA   *April 2021 – July 2023*
IT and Operations Assistant
- Configured devices with MDM software and streamlined MDM enrollment process
- Facilitated the onboarding of new sales representatives

Seriously Addictive Mathematics, Marietta, GA   *March 2022 – January 2023*
Teacher
- Instructed math courses spanning elementary through middle school levels
- Implemented Singapore math curriculum, emphasizing visual learning and critical thinking

Projects

2D Heterostructure Synthesis Vertically Integrated Project
- For-credit research in GTRI's thin film deposition laboratory
- Used molecular beam epitaxy to synthesize indium selenide thin film samples and determine effects of synthesis conditions on crystal structure
- Developed Python code used to analyze, fit, and graph Raman spectroscopy data

Distortion Pedal Design and Build
- Designed, prototyped, and built a custom diode-clipping distortion pedal
- Used KiCAD to design the schematic and PCB layout
- Verified circuit performance with function generator and oscilloscope

Skills and Qualifications

Programming:	Python, C++, MATLAB, HTML, VBA, C, Assembly, Java
Libraries:	NumPy, Matplotlib, libusb, Keysight IO Libraries, PyVISA, Excel C API, Windows API, Tk
Software:	Autodesk Fusion, KiCAD, Quartus Prime, Wireshark, VS Code, Reaper
Technical Skills:	VHDL, PCB Design, Test Automation, Oscilloscope, Signal Analyzer, Spectrum Analyzer, Signal Generator, FieldFox, Git, Cursor on Target

Awards and Honors

- STAR Student Region Winner (awarded for perfect score on SAT)
- National Merit Finalist
- Georgia Certificate of Merit