Charles D. Hendrix

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U.S. Citizen with Secret Clearance

PROFESSIONAL SKILLS

Design and Build	Altium Designer, Ansys SIwave, Keysight ADS, SPICE, Fusion360, Keyshot, Autodesk EAGLE, Adobe Illustrator/Inkscape, Adobe Photoshop/GIMP 2, Keyshot, Draw.io, GNURadio
Programming	Python, MATLAB, C/C++, Bash, SQL, LaTeX
Project Management	Git, Jira, Confluence, Trello

INDUSTRY EXPERIENCE

CESIUMASTRO **Austin, TX** **January 2021 - Present**

Hardware Design Engineer

- Responsible for initial concepts, requirements, and block diagrams, through parts selection, design tools, schematic capture, layout, simulation, manufacturing, and testing. Design to rigorous aerospace standards with coordination across RF, mechanical, and firmware teams. Manage design reviews for each deliverable.
- Currently developing next-gen active phased array hardware for S-band and Ka-band as well as integrated test hardware for the Nightingale communications system.
- Document all design material for internal and external presentation, including interface control diagrams or design notes, as well as graphics and renders.
- Driving company-wide project management infrastructure improvement from untracked verbal commitments and ad hoc spreadsheets to integrated, transparent, and traceable solutions.

STRAPT VENDING (straptvending.com) **Atlanta, GA** **July - December 2020**

Chief of Product

- Designed and prototyped the solution architecture for a digital vending machine for this CreateX-backed startup founded to modernize the distribution of feminine products in public and corporate restrooms.
- Deploying a bidirectional IoT network that securely translates customer payments into contactless vending.
- Redefining a power supply architecture for a device with constricted space when power outlets are unavailable and self-recharging is insufficient.

TESLA, INC. **Fremont, CA** **May - December 2018**

REMANUFACTURING DIVISION

Test Engineering Intern

- Worked with the team that designs and deploys the equipment, standards, and procedures to diagnose and repair failed legacy and current products.
- Analyzed schematics and source code to determine and correct multiple failures across several hardware and software systems, including Roadster sheet testing station and an assembly line real-time result viewer. In troubleshooting a Media Control Unit (MCU) firmware flashing station upgrade, recognized for contribution to worldwide service and productivity goals by launching two new stations.
- Overhauled a webapp with Flask and jQuery to index and search over 20 million files. Expanded search parameters to include filename, author, revision date, and content type. Implemented regex and full-text search mediums to balance accuracy with speed.
- Used Python and JMP to parse hundreds of sheet test results and visualize the effect of cell location on the occurrence of false-negatives. Successfully identified several localized error regions.

- Authored documentation with extensive diagrams, instructions, and troubleshooting methods such as RCA maps to guarantee stability. Tracked progress in Jira sprints to provide visibility.
- As part of a 12-hour hackathon to cut cycle time at a critical bottleneck in a general assembly line, performed time studies and determined the most common failure modes over a large data set. Team reduced time by 50%.

GEORGIA TECH RESEARCH INSTITUTE **Atlanta, GA** **August - December 2017**
INFORMATION AND COMMUNICATIONS LAB
Engineering Intern

- Developed Python code to remotely and automatically set up and re-configure multiple wireless networks.
- Responsible for determining maximum throughput and range of a Sigfox IoT network.
- Independently learned and experimented with software-defined radios through GNURadio in Windows.
- Selected as part of a team to conduct field tests of 5G mobile network signal propagation.

CROWN CASTLE **Canonsburg, PA** **May - August 2017**
TECHNICAL ASSISTANCE CENTER
Engineering Intern

- At the largest U.S. provider of wireless infrastructure, interned with Senior Operations Engineers to test, maintain, and upgrade equipment in 40k+ cell towers nationwide.
- Built Python tool to remotely access multiple generators with Modbus over IP, reducing a weekly, hour-long, manual task to a 30-second automated task.
- Enhanced sales by developing a program to retrieve and centralize height above average terrain (HAAT) values, which indicate broadcast ranges, for all towers; used multithreading programming techniques.
- Designed and constructed an Arduino-based device to accelerate SNMP alarm testing.
- Authored extensive technical documentation and instructions to support completed projects.

EDUCATION AND ACADEMIC EXPERIENCE

GEORGIA INSTITUTE OF TECHNOLOGY **Atlanta, GA** **August 2016 - December 2020**
B.S. Electrical Engineering with Highest Honors
Focus in industrial design and communication systems

INTERDISCIPLINARY DESIGN COMMONS **Atlanta, GA** **May 2019 - December 2020**
Volunteered with prototyping space to guide design and production of student projects.

YUSHIN GROUP **Atlanta, GA** **January - May 2019**
Undergraduate Research Assistant
Assisted in research and fabrication of nanocomposites for enhanced lithium sulfur batteries. Co-author of *Atom-Economic Synthesis of Magnéli Phase Ti4O7 Microspheres for Improved Sulfur Cathodes for Li-S Batteries*.

GEORGIA TECH HYTECH RACING **Atlanta, GA** **November 2016 - May 2018**
Circuits Team Lead, May 2017 - May 2018
Electrical Subsystem Team, November 2016 - May 2017
Designed, built, and raced an all-electric formula style car in the Formula SAE and Hybrid competitions.