

MORGAN NOVAK

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409-853-8303

EDUCATION

University of North Texas - 2020

- B.S. in Electrical Engineering
- B.S. in Computer Science
- Minor in Mathematics
- GPA: 3.95
- Honors Student
- NASA HS Aerospace Scholar
- Houston Rodeo Scholar
- UNT Excellence Scholar

AFFILIATIONS

- IEEE CS
 - Event Coordinator
- IEEE
 - Volunteer Ambassador
- Engineers United
- Society of Women Engineers
- UNT Robotics Club
- UNT SEDS
- UNT Cybersecurity Club

SKILLS

C/C++	VHDL	3D Modeling & Printing	Soldering
Java	JavaScript	Digital Circuit Design	ArcGIS
MATLAB	Arduino	Lego Mindstorms	LabVIEW
HTML/CSS	Altium	Microsoft Suite	Sewing
Python	Linux	Adobe Suite	MultiSim

ACTIVITIES & PROJECTS

- HackUNT Planning Committee
- Developed curriculum and taught workshop over VEX Robotics.
- Technical Reference: NASA GNC Domain Requirements.
- C++ Disease Contraction Simulator
- Security App using MATLAB
- Personal Website:
 - <http://morganthedork.com/>
- T Mobile Hacktober- Cross-Platform Money Exchanging App:
 - <https://devpost.com/software/fund-wap>
- HackUTA- Neighborly Disaster Relief Web Application:
 - <https://devpost.com/software/asyt-me>
- HackDFW Earthack- Autonomous Drone with Air Purity Sensor System:
 - <http://aeriumsolutions.com/>
- HackDFW BUILDATHON- IOT Automated Home Energy Conservation System:
 - <https://devpost.com/software/thermostate-home-automation-system>
- Designed and built custom PC

EXPERIENCE

NASA Johnson Space Center

1/2018 - present

Active Response Gravity Off-load System (ARGOS) Motor Controller Intern

- Developed VHDL code for a custom designed motor controller to control two of the three axes of the next generation of a safety-critical, high-speed, human-rated gravity offload simulator robot.
- Completed hands-on testing and verification of the motor controller hardware and harnesses.
- Tuned velocity and current control loops of the motor controller for use with a new motor.
- Designed cables for a testbed system and created schematics in Altium for fabrication.
- Created an automated controller system with a Raspberry Pi for a gantry that acts as a safety catch for the Valkyrie humanoid robot which reduced required operators by 66%.

The Factory, Makerspace of University of North Texas

8/2017 - present

Factory Specialist

- Trained patrons how to use equipment and software available in the makerspace including 3D printers, laser cutters, cnc machines, VR equipment, and more.
- Supported education and outreach activities geared for enhancing knowledge and interest in STEM.
- Provided tours of makerspace to upper management, prospective students, and members of community.
- Checked equipment daily and documented changes in status, supplies, or other necessities.
- Communicated in a concise and positive manner to a diverse group including students, management, and coworkers.

Aerium Solutions, Drone Company

4/2017 - present

Co-Founder

- Led design and testing of an Arduino sensor system that accurately detected temperature, carbon dioxide, methane, GPS location and reported it to website in real time.
- Integrated hardware and software for sensor system into our drone platform.
- Developed the company's website: <https://aeriumsolutions.com>.
- Maintained Aerium's financial accounts worth \$3,000.

NASA IV&V Facility

5/2017 - 8/2017

GNC Domain Requirements Analysis Technical Reference for Science Missions

- Completed static code analysis from the Requirement Analysis Stage onward on Parker Solar Probe GNC Team.
- Gathered data and constructed database that included eleven different spacecraft's guidance, navigation, and control (GNC) systems and distinguished commonalities across multiple subdomains.
- Created a Technical Reference that includes relative information over GNC to save countless hours during Requirement Analysis Stage for all upcoming missions.
- Presented Technical Reference and data findings to NASA Headquarters and NASA IV&V Facility.