Nathaniel Belles

Cary, NC | 919.649.7173

Nathaniel.Belles@me.com | www.nathanielbelles.tech

EDUCATION

Honors Bachelor of Science in Computer and Electrical Engineering with Minor in Mathematics   May 2016 – May 2021

University of North Carolina at Charlotte, Charlotte, NC

- Overall GPA: 4.0/4.0
- Chancellor's List (Fall 2016 – Fall 2020)
- Involvement: President of Charlotte Area Robotics (Fall 2018 – Present), Robotics and Automation Society (Spring 2018 – Present), Institute of Electrical and Electronics Engineers (Fall 2017 – Present), Tau Beta Pi Honors Society (Spring 2020 – Present)

ENGINEERING EXPERIENCE

Electrical Integration and Test Engineering Intern   May 2021 – August 2021

SpaceX, Hawthorne, California

Ride Control Engineering Professional Intern   June 2019 – December 2019

Walt Disney World Design and Engineering, Orlando, Florida

- Program safety PLCs and create associated HMIs with track map and diagnostic information to accelerate troubleshooting
- Wire new electrical cabinets, terminating cables, keeping clean cable management, and update existing cabinets
- Utilize Disney tools to update documentation upholding Disney standards keeping information accurate

Undergraduate Researcher for PowerAmerica   October 2018 – June 2019

University of North Carolina at Charlotte, Charlotte, North Carolina

- Use semiconductor devices to create a power electronics board used for teaching semiconductor characterization
- Design PCB layout of teaching board to increase efficiency and decrease noise and power loss
- Manufacture boards, soldering all components to custom PCB's and incrementally testing along the way

Technical Intern in R&D   May 2018 – August 2018

SAS Institute, Cary, North Carolina

- Develop reusable scripts for the Fraud and Security Intelligence department
- Create daily reports on the current state of local Cloud Foundry deployments for Visual Investigator
- Unit testing on daily builds and deployments for installation of Visual Investigator/Visual Analytics

PERSONAL PROJECT EXPERIENCE

motorController

A microcontroller-based encoder controller and motor controller

- Features a hardware interrupt encoder and motor inputs (voltage, current, power) and outputs (speed, direction, power)
- Runs on small (hand-solderable) 8-pin SOIC and larger (feature-packed and hand-solderable) 14-pin SOIC
- Ongoing documentation and support on GitLab repository: https://gitlab.com/Nathaniel.Belles/motorController

Self-Writing Chalkboard Robot for Matilda

Children's Theater of Charlotte, Charlotte, NC

- Designed and built a robot that simulated a piece of magic chalk writing on a chalkboard using magnetics and projection
- A short video of some testing done on the robot can be found here: https://youtu.be/uVpk5vx2Kag

LEADERSHIP EXPERIENCE

Leadership Academy Cohort 16, Member   October 2017 – April 2019

William States Lee College of Engineering, UNC Charlotte

- Two-year program modeled after leadership training programs for young professionals in industry
- Learn to communicate effectively, act with integrity, value diversity, achieve meaningful goals and serve others

SKILLS / SOFTWARE

Software: Microsoft Office, AutoCAD, MATLAB, Multisim (Ultiboard), Allegro, Code Composer Studio

Languages: C, C++, Python, HTML, Shell Scripting, Ladder Logic

Prototyping: Laser Cutting/Engraving, 3D CAD/Printing, Breadboarding, PCB Design, CNC Machining, Soldering

Robotics: ROS, Simulation, Path Planning, System Design, Automation, Circuit Design, Microcontrollers, Power Distribution

Operating Systems: macOS, Linux, Windows