Morgan Dykshorn

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OBJECTIVE Find a full time position in embedded systems or robotics starting after May 2018

EDUCATION

B.S., Computer Engineering Expected Graduation: May 2018
Minor: Computer Science
Virginia Tech, Blacksburg, VA
GPA: 3.68/4.0
University Honors Program, Dean's List all semesters

COMPUTER SKILLS

Operating Systems: Windows 7, 8, 10, Linux (Fedora, Ubuntu), OSX
Software: MS Office, MATLAB/Simulink, Canalyzer, AutoCAD, Creo Parametric, LT Spice, Altera Quartus, Eclipse, Visual Studio
Languages: C++, C, Python, Java, Verilog, MATLAB, HTML, CSS
Frameworks: QT, Robot Operating System, FreeRTOS

WORK EXPERIENCE

Powertrain Controls Intern, Ford Motor Company, Dearborn, MI - Summer 2017

- Collaborated with interdisciplinary teams to gather system requirements
- Created various design and verification documents
- Implemented production MBD code for new vehicle features
- Tested and verified features using industry standard SIL and HIL validation

Electrical and Electronics Intern, JLG Industries Inc., Hagerstown, MD - Summer 2016

- Researched, developed and tested an attachment recognition system for telehandlers
- Used proprietary development environment to write and debug embedded C code
- Designed, simulated, and exported control systems using MATLAB and Simulink
- Performed root cause failure analysis of Caterpillar ECU module in 8D format
- Audited inventory to ensure correct wire harness revisions and count

CAD drafter, MVA LLC, Ashland, VA - Summer 2015

- Created and reviewed CAD drawings for various commercial and residential projects
- Managed accounting and project planning programs
- Measured buildings and produced CAD drawings and 3D models

PROJECTS

AutoDrive Challenge, Ongoing

- Working to convert a conventional vehicle to be fully autonomous
- Involved with both sensing and perception from selection of sensing suite to software development

Hybrid Electric Vehicle Team Sign and Vehicle Detection, Spring 2016

- Implemented stop sign detection using color conversion, morphological operators and thresholding
- Used stereo vision and a cascade classifier to detect distance to the car immediately in front of the vehicle

Autonomous LIDAR Mapping Robot, Fall 2015

- Designed and implemented an inexpensive 360-degree LIDAR mapping assembly for a small autonomous vehicle
- Programmed robot using C++, python and ROS using a Beaglebone Black as the main computer

Sound Activated LED Strips, Spring 2015

- Implemented a sound spectrum analyzation CMOS using an Arduino for computations
- Designed and built power supply circuit using MOSFETs and resistors

ME 2984 Introduction to Robotics, Fall 2015

- Covered basics of robotic systems
- Built and programmed robot using ROS

ECE 3574 Applied Software Design, Fall 2016

- Designed distributed multiplayer game with TCP server and client using Qt Framework

ECE 4534 Embedded System Design, Spring 2017

- Developed sensor rover for multi robot capture the flag game
- Implemented all functionality on Pic32 using freeRTOS and wireless TCP communication
- Sensor rover was solely responsible for game map generation

HONORS & ACTIVITIES

HKN IEEE Honor Society
Director of Fraternity Events, Delta Sigma Phi Fraternity
Eagle Scout