Morgan Dykshorn

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OBJECTIVE

Pursue a Masters in Computer Science

EDUCATION

B.S., Computer Engineering, May 2018
Minor: Computer Science
Virginia Tech, Blacksburg, VA
GPA: 3.74/4.0
Magna Cum Laude, University Honors

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, Docker, git
Languages: C++, C, Python, Java, Verilog, MATLAB, HTML, CSS
Frameworks: QT, Robot Operating System, FreeRTOS, Boost, OpenCV

WORK EXPERIENCE

Automated Driving Software Engineer, General Motors, Warren, MI – August 2018 - Present

- Working on small agile development team to build mapping solutions for autonomous vehicles
- Helping train and coach team on agile workflow
- Using modern C++ and Python paradigms to codevelop large scale production software with an international team

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

PROJECTS

AutoDrive Challenge, August 2017 – May 2018

- Worked as Perception subteam lead in competition that involved converting a conventional vehicle to have level 4 autonomous capability
- Third Place overall in Year 1 competition in Yuma, AZ
- Worked on nearly all aspects of vehicle, from sensor drivers, to path planning algorithms

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

CLASSES

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
- Utilized creative mapping and filtering algorithms to create game map

HONORS & ACTIVITIES

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