Ryan Meredith

1943 Pointe Lane Apt# 103, Ann Arbor, MI 48105
(248) 953-1013
remered@umich.edu

OBJECTIVE To obtain a full time position involving embedded systems or controls

EDUCATION

University of Michigan — *Ann Arbor, MI*
M.S.E. in Electrical Engineering: Systems with a Controls Focus — *Jan 2016 – Dec 2016*
GPA: 4.00/4.00
Relevant Course Work: Embedded Control Systems, Linear Control Systems Theory, Matrix Method Signal Processing, and Probability and Random Processes

B.S.E. in Electrical Engineering — *Sept 2012 – Dec 2015*
GPA: 4.00/4.00
Relevant Course Work: Computer Organization, C++ Programming, Digital Signal Processing, Introduction to Logic Design, and Introduction to Material Science

SKILLS Ability in C, C++, Eagle, Matlab, Simulink, LabVIEW, Python, Verilog, and Microsoft Office

ACTIVITIES Eta Kappa Nu — *Sept 2013 – Present*

EXPERIENCE

Wireless Pharmaceutical Analysis Pill Device — *Ann Arbor, MI*
Graduate Student Research Assistant — *Jan 2016 – Present*
- Selected system hardware and routed flexible PCB with transmission lines for Bluetooth RF signals
- Tested circuit design on breadboard to verify functionality and power consumption constraints
- Programmed microcontroller to communicate with stepper motor for sample collection
- Examined PCB chip antenna and transmission line characteristics with network analyzer

Small Scale High Temperature Wireless Sensor — *Ann Arbor, MI*
Research Assistant — *June 2014 – May 2015*
- Programmed microcontroller software in C for wireless temperature sensor optimized for low power consumption and ability to withstand temperatures reaching 150°C
- Developed LabVIEW interface to communicate wirelessly with sensor using LEDs and interpret data
- Demonstrated device functionality for corporate sponsors in Pau, France

Verizon Wireless — *Bloomington, MN*
System Performance Intern — *May 2015 – August 2015*
- Analyzed call performance data to detect issues with cell sites after extreme weather
- Assisted in activating and testing signal range and quality of a new cell site

PROJECT EXPERIENCE

University of Michigan — *Ann Arbor, MI*
Electric Guitar Automatic Tuner — *Jan 2015 – Apr 2015*
- Led team of four in designing and building an embedded system that processes the voltage signal generated from electric guitar pickups to control the tuning of each string using stepper motors
- Prototyped algorithm to detect fundamental frequencies of six strings at once using windowing, DFFT, parabolic interpolation, and harmonic matching in Matlab before coding final version in C

Car Automatic Steering and Adaptive Cruise Control Simulation — *Apr 2016*
- Created car model in Simulink with vehicle dynamics and steering wheel input from haptic wheel
- Tuned steering PID controller to handle road curves at high speeds with minimal oscillations
- Communicated car position and speed over CAN network for simulation between computers

Robotic Exploration of Space Team — *Jan 2014 – May 2014*
- Worked on a multidisciplinary team to build a rover for competition to excavate and analyze samples taken from a sandy terrain
- Researched lightweight communications marshalling (LCM) to transfer control data to the rover

LEADERSHIP

University of Michigan Concrete Canoe Team — *Ann Arbor, MI*
Head of Paddling Practice — *Sept 2012 – June 2014*
- Spearheaded new strategy of renting a pool during winter months to practice with canoes
- Planned and led sessions to learn paddling techniques in preparation for racing in competition