

## Work Experience

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### SmartAg, Ames, IA | Electrical Automation Intern

Summer 2018,  
Summer 2017

- Led and developed in-house automated tester device for controls board by designing electrical schematic (MultiSim, EAGLE), prototyping, and programming with Arduino
- Programmed and field tested PID controls for autonomous tractor motion
- Analyzed and redesigned wiring diagrams across all product lines to improve efficiency
- Mounting brackets, drilling holes, and installing autonomous hardware on tractor and combines
- Gained independence in technician activities such as soldering and crimping, connector assembly, building automotive wire harnesses, board testing, and debugging with multimeter

### Iowa State University, Ames, IA | Teaching Assistant (Dr. Gary Tuttle)

Spring 2016

- Conducted weekly lab sessions for Electrical Circuits (EE 201) covering circuit building, testing, and PSpice analysis for 30+ students

### GIANT Internship at Grenoble Institute of Technology | Undergraduate Research Intern

Summer 2015

- Conducted study titled, "DNA Grafting on Nanowires," to quantify DNA deposition on electrically conductive nanowires used for biosensor devices in disease detection
- Oral presentation at ISU Undergraduate Research Symposium 2016

### The Boeing Company, Huntington Beach, CA | IT Intern

Summer 2014

- Created and reviewed engineering specification docs for network access protocols in data centers
- Ran monthly RIO (Risk, Issue, and Opportunity) Board meeting
- Facilitated a team of interns in proof-of-concept of tablet/wearable use at airline crash sites

## Projects/Research

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### Class D Amplifier for Integrated Electronics Class (EE 330)

Spring 2018

- Built transistor layout and simulated in Cadence, wrote tests in Verilog

### Independent Sustainability Research Project

Spring 2017

- Conducted study, "Addressing food shortages through vertical farming and efficient microgrid design"
- NSF Grantee for poster presentation at UPitt Mascaro Sustainable Eng Conference 2017
- Poster presentation at National Conference on Undergrad Research (NCUR) 2017, Memphis

### Laboratory of Integrated Optical Sensors, ISU | Research Assistant (Dr Meng Lu)

Fall 2016

- Conducted study, "Water Quality Study for Microcystin Detection using Colorimetric Gold Nanoparticles,"
- Oral presentation at National Conf on Undergrad Research (NCUR) 2017, Memphis

- HackUTA 2017 - MS Kinect security camera (motion and facial detection) built in Python and OpenCV
- Senior Design 2017 - Washing machine ON/OFF state, built protoboard and wrote Arduino code
- Amazon Alexa Skill Development - University Challenge Diploma, 2 skills, 100+ downloads each

## Education

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### Iowa State University, Ames, Iowa

Fall 2013 - Fall 2018

- B.S. Electrical Engineering
- EE GPA: 2.70/4.00

### Grenoble Institute of Technology, Grenoble, France

Summer 2015

- Nanotechnology Program

## Distinctions

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- "Academic Achievement Award" 2013-2018
- "Best Design" and "Best Use of Microsoft Azure for Good" At HackRice 2017
- "Best Agricultural Venture" at ISU Innovation Pitch Competition 2017

## Technical Skills

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**Programming Languages:** Python, Java, C++, Matlab, OpenCV, ROS; Web Dev - HTML5, CSS, Javascript

**Hardware:** Power Supplies, Oscilloscope, Function Generator, Signal Processing, Microcontrollers

**Software:** PSpice, MultiSim, Cadence Virtuoso, EAGLE, Automated Testbench in NI Signal Express, Verilog