

# IAN W. ORR

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3321 Castlegate Drive  
Raleigh, NC 27616

## Education:

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### **Masters of Science, Mechanical Engineering (May 2016)**

North Carolina State University

### **Bachelors of Science, Mechanical Engineering (May 2013)**

North Carolina State University

**Graduate Courses:** Computer Control of Robotics, Real Time Robotics, Software for Wireless Sensors, Design of Electromechanical Systems, Airfoil Theory, Engineering Optimization, Nanotechnology, Precision Manufacturing.

### **Masters Research - Intricate Laser Processing Lab**

- Conducted research on control systems and developed a block diagram model of a linear motor setup using Simulink to diagnose problems with motor function and help tune the PID controller.
- Researched optics to determine methods of determining focus position within microns.
- Developed Galil program to bring laser into focus automatically and tune PID controller.
- Mentored incoming students and instructed on operations within the lab.

## Technical Skills:

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- Python, Excel VBA, Matlab, C, Java, Android IDE, Linux
- Circuit Diagrams, soldering, electronics, sensors
- Basics of Agile methodologies
- Simulink, Galil, PID controls, PLC ladder logic
- Selenium with Python
- Beaglebone, Arduino, embedded systems experience
- SolidWorks, Pro-E, AutoCAD

## Project Work:

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- Created bot using Selenium to purchase PS5
- Designed simulation of robotic arm moving objects.
- Developed PID controller for vibration isolation table.
- Worked with team to develop system to move Da Vinci robotic end effector.
- Developed software and embedded IOT networked system to detect parking spot availability.
- Created program with team to track bucket position of skid steer loader using sensors.

## Achievements:

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- Python Udemey Certificate
- Confidential security clearance (exp. 2025)

## Work Experience:

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### **Kilian Engineering Raleigh, NC – Project Manager**

**November 2017 – April 2020**

- Collaborated with clients to create timeline and project scope.
- Designed building utility plans using AutoCAD to meet or exceed national and local code requirements.
- Oversaw projects from proposal to completion, including customer interfacing, change orders, and peer review.
- Convened with clients on-site to verify project constraints.
- Established positive relationships with new and existing clients.

### **James Hardie Building Products Pulaski, VA – Manufacturing Engineer**

**January 2017 – August 2017**

- Managed capital projects up to \$1.5 million.
- Lead multiple projects implementing automated data gathering programs.
- Managed plant process, employees, and schedules and reported updates to CEO.
- Updated and improved equipment designs using AutoCAD to purchase them from vendors.
- Improved plant processes and equipment using engineering background to increase plant productivity.
- Created new metrics for process allowing for better visibility to improve design throughput limit by 5%.

### **NC State University, Raleigh, NC - Teaching Assistantship**

**August 2013 – May 2015**

- Instructed multiple classes about concepts of thermodynamics and heat transfer.
- Developed and improved experiments by coordinating with other instructors and head of department.
- Educated students on proper syntax and formatting of technical reports.

### **Raytheon Andover, MA – Intern**

**Summers 2012, 2013, 2014**

- Designed missile shelter parts with Team using Pro-E and SolidWorks
- Programmed new jobs for manufacturing equipment.
- Supported manufacturing by diagnosing machine problems and getting tools replaced.
- Developed VBA program to sort through part reject data