

THOMAS R. LACEY

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EDUCATION:

Northern Virginia Community College

Major: Engineering

A.S. Engineering

George Mason University

Major: Mechanical Engineering

Expected Graduation Date Dec 2017

B.S. Mechanical Engineering

PROFESSIONAL EXPERIENCE:

National Institute of Standards and Technology (NIST) Intern

[Summer 2017]

- Design, fabricate, and install custom sensor array for data acquisition in commercial HVAC ductwork. Install individual sensors throughout the system for data acquisition including pitot tubes, RTD arrays, humidity sensor, pressure transducer.
- Initialize microchip to function as a digital potentiometer with binary pulses sent from a program written in LabVIEW. This allowed the main LabVIEW program to be able to communicate with the thermostat which interpreted temperature as resistance.
- Pull vacuum then charge commercial HVAC lines & commission the unit: Two compressors with intelligent controls.
- Read manual and troubleshoot digital scroll compressor.
- Prevented complication with system by finding normally closed solenoids that were not wired and not manually set to open. These would have blocked refrigerant flow completely.
- Use LabVIEW to acquire desired data from weather station website.

Curtainwall Design Consulting CDC Intern

[Summer 2016]

- Design detail drawings of penetrations and waterproofing using AutoCAD and Inventor.
- Monitor the installation of roofing on MGM Casino in National Harbor. Monitored the installation of mechanical fasteners, layers of insulation, application of adhesives, application of top cap. If installation was not according to what MGM or WT requested, the workers were warned of non-compliance.
- Monitor the installation of Hot Fluid Applied (HFA: hot tar for waterproofing the deck) at MGM Casino.
- Assist with Electronic Leak Detection (ELD) on surfaces that were waterproofed with HFA.

The Bike Lane*Sales Associate***[2013-2017]**

- Design large theme marketing art for the Reston location.
- Design sales floor layout and product placement as well as store continuity.

RTL Electric*Apprentice Electrician (Union)***[2007-2010]**

- Installed, maintained, and repaired commercial wiring and devices.
- Custom formed electrical conduit to fit spacing requirements.
- Cooperated with other tradespeople to ensure success of synchronized installations.
- Solved issues that arose from updated blueprints.

United Air Temp*HVAC Technician***[2005-2007]**

- Provided residential emergency repairs and regularly scheduled maintenance.
- Provided 24 hour on-call emergency response of HVAC units from all manufacturers.
- Followed wiring diagrams to diagnose complex issues.

Action on Smoking and Health*Administration***[2004-2005]**

- Provided support to executives of a non-profit antismoking organization.
- Assisted in translation of organization's news into French and Spanish.
- Provided aesthetic promotional graphic designs.

The Container Store*Assistant Manager***[1998-2004]**

- Utilized CAD software to design custom storage solutions.
- Assisted in design and implementation of the store's training courses.

PROFESSIONAL DEVELOPMENT:

- Leader of my Senior design project team tasked with developing a telemetry incorporated Paint Spray Gun that will predict the thickness of paint applied to a surface so that workers can handle these problems before inspection on site, or failure in the field.
- Treasurer of The Vegan Society at George Mason University.
- Performed CAD design and simulated stress analysis with Autodesk Inventor on the HPVC (Human Powered Vehicle Competition) frame and wheels.
- Current committee member of the PGF (Patriot Green Fund) which decides where \$100,000 will be distributed annually to green research and installations on campus.
- In spare time developing a mechanical energy storage device to reduce the dependence upon chemical batteries or fossil fuels.
- Maintaining contact with the Solar Tree development program I helped create at NVCC in August 2014 strengthens the network bond between GMU and NVCC as well as my own personal network of engineering students and professors.
- I work with master bicycle wheel builder Bill Mould on the physics and engineering stresses involved in the building, production, and use of a bicycle wheel.
- On the Dean's list for two semesters in a row.
- I create narrations of text books for school at no charge and am part of the ACX audiobook narration community. I have been asked to narrate a documentary for a nutrition consulting company called PlantEd.

PROFESSIONAL CERTIFICATIONS:

CompTIA A+ ID: COMP001020268014
Certified HVAC Technician (CFC Expired)
10 Hour OSHA certified
Certified completion of LabVIEW Core 1 and 2

ADDITIONAL LANGUAGE PROFICIENCIES:

Spanish

COMPUTER PROFICIENCIES:

LabVIEW, MATLAB, Inventor, AutoCAD, Excel, Microsoft Project 2016, Outlook, PowerPoint, Word, Photoshop, Reaper, .