

Cameron O'Neill

Mechanical Engineer

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PROFESSIONAL EXPERIENCE

Mechanical Engineering Co-op at Google

Mountain View, CA

January 2019 – June 2019

- Proposed thermal architectures and their design tradeoffs to ME, ID, and EE teams using data generated from analytical, numerical (CFD simulations), and experimental models
- Defined workflow for integrating free-form optical surfaces from optics CAD (Zemax/CodeV/LightTools) into functional solid bodies for use in mechanical CAD (NX11) assemblies
- Fabricated prototype head-mounted AR/VR systems for thermal capability tests and proposed design demonstrations
- Developed spreadsheet analytical tools which predict coupled flow and thermal characteristics of forced convection systems based on input inlet/outlet/heatsink geometric parameters and fan curve data measured in flow chamber testing

Hardware Engineering Co-op at Canary Connect

New York, NY

January 2018 – June 2018

- Lead mechanical design of a kinetic energy-harvesting Bluetooth doorbell button, including creation of drawings (with GD&T) for overseas manufacturing, 15+ industrial design variations, and continuous adjustments for RF considerations
- Performed complete DFM analysis of multiple injection molded parts to minimize cost while meeting cosmetic color, material, and finish requirements to fit in with the company's existing home security product line
- Collaborated with EE to generate product schedule, BOM, product requirements document, test plan, and design reviews
- Designed semiautonomous fixtures for computer vision parameter tuning, lens focusing, and reliability testing

Mechanical Engineering Co-op at Medtronic

North Haven, CT

January 2017 – August 2017

- Conducted electromechanical testing on components of a minimally invasive surgical system under development
- Coordinated purchasing of source materials for prototype builds, then built said prototypes while providing assembly feedback and identifying design defects
- Developed test methods, fixtures, and reports for 100+ product requirements based on industry standards (IEC 60601-1, ISTA 3A, etc.) and customer needs

SIGNIFICANT PROJECTS

- Designed and built a MIDI Accordion, including circuitry and software control of 168 (analog and digital) inputs mapped to a fully dynamic MIDI output (2017)
- Modeled and pitched a powder-based beverage vending machine and corresponding go-to-market strategy to win 3rd prize in Northeastern's Husky Startup Challenge (2016)
- Designed and demoed a low-cost plastic filament extrusion machine for producing 3D printer filament on demand (2015)
- Collaborated with e-Nable to design a 2-axis multi-material prosthetic hand for elderly man without fingers (2014)
- Converted a Nintendo N64 console to a battery powered handheld device with integrated screen and controller (2012)

TECHNICAL SKILLS

- NX, Inventor, SolidWorks, PTC Creo, Fusion 360, Moldflow Advisor, Microsoft Office, Python, C++, MATLAB, ANSYS
- Operation of DAQs, oscilloscopes, multimeters, flow chambers, IR cameras, thermocouples, PID controllers

EDUCATION

Northeastern University College of Engineering

Boston, MA

3.583 GPA

Fall 2015 - Present

- Candidate for Bachelor of Science in Mechanical Engineering (Fall 2019)
- **Relevant Coursework:** Materials Science, Finite Element Analysis, Dynamics & Vibrations, Customer-Driven Technical Innovation, Thermodynamics, Mechanics of Materials, Fluid Mechanics, Eng. Mechanics & Design, Heat Transfer
- **Volunteer Work:** Writing tutor at John D. O'Bryant High School (2015) through 826 Boston, MIHNUET accordionist
- **Achievements & Activities:** Dean's List, Autodesk Student Expert, ASME, Wind Ensemble, Pep Band, Club Wrestling