

# Matthew Martin, CSWA

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*Hands on engineering student with drafting, machining, and electronic systems experience.*

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## **Education**

Wentworth Institute of Technology, Boston, MA

Expected Graduation August 2017

Bachelor of Science in Mechanical Engineering

## **Technical Skills**

Engineering:

Basic Welding, CNC Machining, Basic Casting

Software:

SolidWorks Associate-Mechanical Design, PTC Creo, PTC Windchill, AutoCAD, Microsoft Office, Multisim, Mach3, BobCAD

Manufacturing:

3D printing, G Programming Language (G-code), CNC Milling on 4 Axes

## **Coursework**

Calculus I-IV

Simulation Based Design

Mechanical Design and Analysis

Fluid Dynamics

Engineering Statics

Engineering Graphics

Design of Machine Elements

Circuit Theory and Application

Engineering Heat Transfer

Strength of Materials

Engineering Dynamics

Mechanical Engineering Design

## **Projects**

### ***Engine Hoist Analysis***

- Given 3D SolidWorks model of 2 Ton max load Engine Hoist for analysis
- Conducted calculations and SolidWorks FEA to determine component stress, displacement and bolt loads
- Design overhaul to meet specifications for displacement and FoS
- Used Design Optimization Analysis to find optimal part sizes and specs, confirmed with FEA

### ***Gearbox Design***

- Researched industry standards and specifications for gears, shafts, and seals based on required ratio and output
- Performed stress and loading analysis on gears, shafts and shear pin
- Used SolidWorks to model gear, pinion, housing, shafts and bearings
- Used SolidWorks Simulation to perform FEA on the gearbox to find show failure points and fatigue failure

### ***Battle Robotics***

- Used SolidWorks to fully model and estimate weight of robots before manufacturing
- Machined interchangeable parts for custom 15lb battle robots out of aluminum and steel
- Operated 4 axis CNC mill, custom water/air cooling system
- Fixed problems such as stuck limit switches, oil flow problems, and emergency shutdowns on CNC mill
- Travelled to national competition in Indianapolis with team, did well

## **Work Experience**

Qinetiq North America – Waltham, MA

September 2016-December 2016

### ***Design Services Co-Op***

- Detailed design and drafting in 3D Solid Modeling CAD program (CREO)
- Implementation and completion of engineering change orders
- Investigate and resolve production issues

Massa Products Corporation – Hingham, MA

January 2016-August 2016

### ***Engineering Co-Op***

- 3D Design and development in SolidWorks
- Review of electro-acoustic device design for military and commercial applications
- Engineering documentation

SK Marine Electronics, Inc. – New Bedford, MA

May 2015-August 2015

### ***Marine Electronics Technician***

- Installation, networking and repair of high end marine electronics packages
- Custom fabrication and mounting systems

3A Marine Service, Inc. - Hingham, MA

June 2008-December 2014

### ***Assistant to Parts Manager***

- Parts fitment research and sales
- Regulated and maintained inventory
- Boatyard maintenance and boat storage services

## **Technical Certification**

Accredited in December 2013

- Certified SolidWorks Associate (CSWA)