**MATTEO J. POLCARI**

matteo@polcari.com

Cell Phone: (978) 808-7904

4 Vesbard Lane Pepperell**,** MA 01463

**EDUCATION**

**University of Massachusetts Lowell** Lowell, MA

**Bachelor of Science Degree in Mechanical Engineering** – Cumulative GPA 3.2/4.0 Grad. Spring ‘14

Enrolled in Master of Science Degree program in Mechanical Engineering Fall ‘14

Member of Pi Tau Sigma International Mechanical Engineering Honor Society December 2012 – Present

*Relevant Coursework and Projects on next page*

**SKILLS**

* **Computer Skills:** Expert with Microsoft Office Word, Excel and PowerPoint. Experienced with SolidWorks, Matlab and Pro/Engineer. Exposure to MATHCAD, FEMAP, ABAQUS and Dynacam.
* Machine shop experience with drills, lathes and milling machines
* Critical thinking, problem solving and research skills honed through coursework
* Strong teamwork, organization and communication skills due to academic and business practices

**WORK EXPERIENCE**

**Umass Lowell’s Centers for Learning & Academic Support Services** Lowell, MA

*CRLA Certified Tutor, Level 1* September 2012 – Present

* Use my leadership and communication skills to help students learn and improve study skills
* Develop my ability to explain and clarify information to others
* Enhance my ability to collaborate when working with other tutors to solve difficult problems
* Keep in practice with material from courses taken in previous semesters

**Landscaping/Property Maintenance** Pepperell, MA

*Proprietor* 2008 – 2012

* Worked for the complete satisfaction of customers
* Earned multiple repeat service requests
* Ran my business smoothly and dependably in an organized fashion

**SERVICE EXPERIENCE**

**High School Relay for Life Volunteer** 2008-2010

* Logistics Committee Chair of the student-run program at North Middlesex Regional High School
* Responsible for arranging field used for overnight Relay for Life event
* Responsible for contacting local businesses about planning for food, supplies and minor events

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**RELEVANT COURSEWORK**

**Thermal/Fluids**:

* Thermodynamics
* Conduction & Radiation Heat Transfer
* Fluid Mechanics
* Convective Processes
* Analysis of Thermo-Fluid Processes

**Mechanics/Materials**:

* Mechanical Behavior/Materials
* Statics, Dynamics
* Strength of Materials, Applied Strength of Materials
* Design of Machine Elements

**General Mechanical Engineering**:

* Introduction to Engineering I & II, Mechanical Design Lab I & II, Mechanical Design I & II, Mechanical Engineering Lab I & II
* Differential Equations
* Math Methods for Mechanical Engineers
* Introduction to SolidWorks
* Design Theory and Constraints
* Dynamic Systems Analysis
* Ocean Engineering
* Engineering Project Management

**PROJECTS (Performed in teams)**

* Design and construction of model bridge using popsicle sticks
  + Designed to endure loading far in excess of the weight of the bridge
* Design and construction of functioning wind turbine using wood and other common materials
  + Used magnetic coil to harness wind energy and light up a diode
* CAD design and prototype manufacture of pill-making device – competitive class project
  + Met specifications, was voted best design by peers in Mechanical Design Lab I class
* CAD design and prototype manufacture of double-dwell linkage assembly
  + Low material usage, met prescribed motion specifications
* CAD design and prototype manufacture of cam
  + Met four point dwell specifications
* CAD modeling and finite element analysis using FEMAP and ABAQUS of multiple beam types and loading conditions
* Design of gear shaft based on loading, fatigue and speed specifications
* Capstone: Performed research experimentation on carbon nanotube (CNT) reinforced carbon composite material; showed significant increase in out-of-plane thermal conductivity
* All projects included periodic and final progress reports and presentations