Peter Ascoli | E.I.T.

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Education

Fall '15 - Present — **Massachusetts Institute of Technology**, Cambridge, MA, USA
Master of Science, Mechanical Engineering, Design and Manufacturing, Expected May 2017
- Cumulative GPA: --/5.00 (--/4.00)
- Awards: School of Engineering KUT Fellowship (*2015-2016*), Graduate Research Assistantship (*2015-2017*)

Fall '11 - Spring '15 — **The Cooper Union for the Advancement of Science and Art**, New York, NY, USA
Bachelor of Engineering, Mechanical Engineering, Graduated Summa-Cum-Laude May 2015
- Cumulative GPA: 3.93/4.00, Major GPA: 4.00/4.00
- Awards: Full Tuition Merit Scholarship (*2011-2015*), Dean's List (*2011-2015*), Highest Cumulative GPA (*2015*)

Experience

Fall '15 - Present — **Graduate Research Assistant at MIT**, Cambridge, MA, USA
Laboratory for Manufacturing and Productivity
- Redesigning mechanisms, control systems, and optical stacks of a direct-write nanolithography machine to achieve micron-level precision in centrifugally casting roll-to-roll microcontact printing stamps

Summer 2014 — **Mechanical Design Engineer at NASA Kennedy Space Center**, Cape Canaveral, FL, USA
Structures and Mechanisms Design Branch
- Designed a 14,000 lb aluminum and steel structural addition to an Orion Crew and Service Module spatial mockup to mimic the mass properties of the flight vehicle for ground transportation tests
- Designed an aluminum tripod hoist structure that mounts to the Vehicle Motion Simulator for locating the Orion Service Module Umbilical Plate in dynamics tests (manufacture and assembly began May 2015)
- Modeled 3D CAD assemblies and components (*Creo Parametric*), validated designs with parametric hand calculations (*MathCAD*) and finite element analysis (*Creo Simulate*), and vetted designs with NASA engineers
- Recieved the NASA Kennedy Space Center Intern of the Year Award (*2014*)

Fall '12 - Spring '13 — **Mechanical Design Engineer and Fabricator**, New York, NY, USA
New York City Artist MaDora Frey
- Designed and fabricated a pair of electro-mechanical sculptures, shown in a Brooklyn Gallery (*2015*)
- Modeled 3D CAD assemblies and components (*Inventor*), created 2D drawings for manufacturing, programmed Arduino, sourced material stock, and machined and assembled the sculptures, which included truss, lead screw actuation, and pulley systems

Selected Projects

2014 - 2015 — **Curved Layer Carbon Fiber 3D Printing**
- Developed a curved layer carbon fiber FDM printer with control over fiber orientation
- Created a carbon fiber reinforced thermoplastic filament compliant with standard extrusion hardware
- Implemented composite FEA (*ANSYS*) to optimize fiber orientation for a sample specimen
- Programmed a *FANUC LR Mate 200iC* with printing toolpaths and fabricated a custom extruder end-effector

2014 - 2015 — **Second Operation Lathe**
- Designed and manufactured a second operation lathe for Cooper Union's student machine shop
- Created 3D components and assemblies, and 2D drawings for manufacturing (*SolidWorks*)
- Validated designs with parametric hand calculations (*MATLAB*) and finite element analysis methods (*ANSYS*)
- Sourced materials and machined nearly all components from stock with manual and CNC mills and lathes
- Lead designer and fabricator for the frame, continously variable transmission, and compound rest

Technical Skills

Computer: SolidWorks, Inventor, PTC Creo, ANSYS, AutoCAD, LabVIEW, MATLAB, MathCAD, LaTeX, Microsoft Office, Adobe Creative Suite, and Mac and Windows operating systems

Machining: Saws, drills, sanders, grinders, lathe, mill, sheet metal brake, laser-cutter, plasma-cutter, and 3D printer

Electrical: Soldering, Arduino, digital logic design, oscilloscope, power supply, and motors (DC, servo & stepper)

Imaging: 4^{+} years of shooting DSLR and mirrorless cameras RAW in PSAM modes & post-processing RAW files

Leadership

2014 - 2015 — **Pi Tau Sigma at The Cooper Union**, *President (elected)*

2012 -2015 — **Engineering Student Council at The Cooper Union**, *Mechanical Engineering Representative (elected)*