Chris Magoon

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Education

2009 - 2014 **Thayer School of Engineering at Dartmouth College,** Hanover NH
Bachelor of Engineering, Concentration in Mechanical Engineering | 3.48 GPA
Engineering Coursework: Computer Aided Mechanical Engineering Design, Dynamics, Machine Engineering, Engineering Design Methodology, Materials Processing and Selection, Solid Mechanics, Materials Science, Sustainable Natural Resource Management, Systems, Statistics

2009 - 2013 **Dartmouth College,** Hanover NH
Bachelor of Arts in Engineering Sciences | 3.58 GPA

Academic Honors and Awards – Awarded for outstanding performance of student project teams

Spring 2014 **Dartmouth Society of Engineers Prize** – For my design team's Solar Ballast Mount project in Engineering Design Methodology

Fall 2010 **Phillip R. Jackson Engineering Sciences Prize** – For my team's automatic longboard brake in Introduction to Engineering

Experience

Nov 2018 - present **Research and Development Engineer,** Robotics Plus, Tauranga
- Developed new fruit conveying and orientation modules for our next generation Robotic Apple Packing machine
- Improved cleanability and serviceability of modules to future proof design for increasing food hygiene requirements
- Reduced module cost and assembly time from previous production model through innovative design improvements
- Designed sheet metal, machined, and cast urethane parts for production as well as early-stage prototyping and testing
- Created documentation for fabrication and assembly of modules, machine use and service, and machine risk assessment

Sept - Nov 2018 **Mechanical Engineer,** Plazmax, Rotorua
- Converted and repaired existing SolidWorks models to fully parametric driven assemblies to allow easy size customization
- Completed mechanical assembly of plasma cutting machines - cutting stock, fitting linear bearings and motors, rework parts
- Developed new machine carriage system to allow for minimum shipping width

July 2016 - August 2017 **Mechanical Engineer,** Fikst Product Development, Woburn, MA
- Worked in several small project teams with clients to develop medical, biotech, and microfluidic products
- Designed and fabricated a variety of parts and manufacturing tools for testing, process development, small scale production
- Created and implemented testing, documentation, and analysis protocol to systematically test microfluidic device prototypes
- Documented device testing with photo and video microscopy to analyze and understand failure modes
- Designed and built an automated programmable heat sealer to prepare uniform product samples needed for testing
- Maintained two laser cutters with weekly cleaning, optics adjustment; trained new employees to ensure safe and efficient use

Sept - Dec 2015 **Technical Instructor,** Thayer School Machine Shop, Hanover, NH
- Instructed students in the operation of machine tools including CNC Mills and Lathes, laser cutters, band saw, drill press
- Conducted weekly skills training sessions and acted as primary technical advisor to 8 student design teams in 2 classes
- Worked with professors to develop new tutorials to teach SolidWorks and machining skills
- Ensured safe and efficient operation of shop facilities

July 2014- July 2015 **Design Fellow,** Thayer School of Engineering, Hanover, NH
- Advised student design project teams, providing assistance in fabrication, CAD, and general design advice
- Worked with professors in 6 design classes throughout the year on student skills training and curriculum development
- Developed and taught tutorials in SolidWorks for students in Solid Mechanics, Product Design, and Intro to Engineering
- Honed my fabrication and machining skills through creative independent projects in the machine shop

Jan - Mar 2015 **TibFinder ™ Lead Designer, Cofounder,** Iometry INC, Thayer School of Engineering, Hanover, NH
- Worked with a team of students and faculty to develop a guide for the placement of an intra-osseous injection in the tibia
- Fabricated dozens of looks-like and works-like prototypes for user testing and analysis
- Rapidly iterated our designs through group brainstorming and critiques, discussions with medical experts, and user testing
- Put our final design on a pathway to future manufacturing through initial refinement and optimization for injection molding

Skills

Applications
Certified SolidWorks Professional including competency in sheet metal, FEA analysis, mold tools, surfacing, rendering, and SolidWorks Composer
HSM Works, MasterCAM, Haas and ProtoTrak CNC interface, SketchUp, CorelDraw, Microsoft Office Suite, Adobe Photoshop

Machine Tools
Program, run, and tune CNC mill jobs for complex multi-operation parts
Design and use of jigs and fixtures for efficient part production
3D surfacing, polishing, and finishing of microfluidic prototypes
Extensive manual and CNC Lathe experience for prototyping parts

Additional Fabrication Experience: Composite Layup, Laser Cutting, 3D printing, Vacuum Forming, Sand Casting, Plasma Cutting, Wood Lamination, Basic MIG and Oxy-Acetylene welding, Concrete Casting, wood lathe, advanced woodworking

Interests

Windsurfing, Nordic and Backcountry Skiing, Freediving, Boogie boarding, Freeride and Downhill Longboarding, Longboard design and fabrication, Videography and Photography, Backpacking, Canoe Camping, Tree Climbing