

# David Orozco

orozcomit@gmail.com

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## Education

### Massachusetts Institute of Technology (MIT)

*Candidate for a Bachelor's in Mechanical Engineering and Physics (GPA 4.5/5.0)*

**Cambridge, MA**

*Graduated June 2014*

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## Work Experience

### Crystal Creations LLC

*Co-Founder*

- Invented new 3D printing technology to be implemented as an inexpensive children's toy and wrote patent to protect the IP.
- Handled various business operations such as creating the overall business plan, branding and logo creation, company registration, managed user testing, etc.

### Plasma Science and Fusion Center

*Research Specialist*

**MIT**

*June 2014 to Present*

- Developed compact, solid-state charge-particle spectrometer and successfully implemented on OMEGA Facility. Created analysis method to determine spectrum for the apparatus and created script file to execute analysis.
- Designing orange-spectrometer for nucleosynthesis experiments in Inertial Confinement Fusion (ICF) experiments. Developed script that incorporates ion optics to build magnet for the spectrometer
- Designed electrical system and vacuum chamber for group particle accelerator.
- Designed new logo for the group

### Undergraduate Research Assistant

*Fusion Diagnostic Developer*

**MIT**

*June 2013 to June 2014*

- Designed, built, and tested pinhole camera to classify fusion source size for fusion reactions in a particle accelerator. Was able to determine the fusion site of Deuteron-Deuteron protons.
- Developed and implemented charged particle diagnostic for OMEGA to successfully measure fusion yield.

### 3D Printer Subsystem Designer

*June 2012 to September 2012*

- Designed and built print head module with heating and control system to enable 3D printer to use wax as a print medium.
- Designed and built cleaning and refilling system for the print head module.
- Developed an optical sensor to use and a level detector inside the wax print head.

### Hamilton Sundstrand Power Systems

*Verification Engineer Intern*

**San Diego, CA**

*May 2011 to August 2011*

- Tested an Auxiliary Power Unit (APU), the engine in the tail cone of airplanes, for excess vibration of different components that make up the APU. At the end of the test, I processed the vibration data and reported it in written form.
- Created a new schedule for the Calibration Department, found inefficiencies within the department, and provided solutions for the various problems.
- Authored and processed all necessary engineering documents to set in motion the build of a development engine.

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## Extracurricular

### American Society of Mechanical Engineers

*President*

**MIT**

*December 2012 to December 2013*

- Organize main goals and activities for the MIT ASME chapter.
- Find new ways of getting members involve and finding new members.
  - Hosted Halloween themed engineering completion "Monstrous MechE"
  - Held day long Lego design challenge
  - Create PR design challenges that included T-shirt design competition and MechE poster Design Competition
  - Balanced the club budget

### Corporate Liaison

*February 2012 to December 2012*

- Set up goals and responsibilities of this newly created position.
- Organize corporate events where students and companies can interact and begin developing ties.

### Electric Vehicle Team

*Lead Mechanical Engineer*

**MIT**

*June 2012 to June 2013*

- Designed trailer and corresponding suspension system for a battery pack to be used on an electric bicycle with the goal of going from Boston to New York City, safely, on a single battery charge.

- Begun preliminary mechanical testing to verify design and set up bill of materials and build process plan

### **Active Member of Theta Delta Chi**

**MIT**

*Academic Chair*

*February 2011 to February 2012*

- Created a method of rewarding and recognizing academic achievements.
- Set a system to collect grades and provide resources to brothers who are in need of help.

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### **Skills**

- Fluent in Spanish
- Proficient in Microsoft Word, Excel, PowerPoint, SolidWorks, Matlab, Mathematica, LaTeX, and Arduino.
- Trained to use CNC Lathe and Mill, Band saw, Drill Press, and various other machine and hand tools