

# Forrest Bourke

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## Education

May 2016 **Franklin W. Olin College of Engineering**, Needham, MA, Candidate for Bachelor of Science in Electrical and Computer Engineering.

June 2012 **La Cañada High School**, La Cañada, CA, Graduate with Honors.

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## Coursework

**Olin College**, (*Partial List*), *\*In Progress*.

Modeling and Control; Modeling and Simulation; Real World Measurements; Software Design; Advanced Welding; Principles of Engineering; Electricity and Magnetism; Microelectronic Circuits\*; Signals and Systems\*; User-Oriented Collaborative Design\*

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## Experience

Fall 2013 **The Confectionery Cannon**, *Olin College*, [confectionerycannon.com](http://confectionerycannon.com).

Designed and built a face-tracking marshmallow launcher with a team of 3 others. Designed website, (featured on Hackaday, Gizmodo, Boston Magazine, Discovery Channel, among others) as well as assisting with design, fabrication, and software of the cannon.

Continuous **Assorted Projects**, *Spare Time*.

Built a quadcopter with 2lbs lift weight, capable of filming using a camera on a stabilization gimbal. Used a PrintrBot Simple to create a variety of trinkets out of PLA plastic. Designed and built a power amplifier around the Texas Instruments/National Semiconductor LM4780, featuring a custom PCB and laser-cut Baltic birch case with an edge-lit acrylic front panel.

Fall 2013 **Modeling and Control Course Assistant**, *Olin College*.

Taught tutorial sessions, held office hours, and graded labs for Olin's introduction to circuits class.

Summer 2013 **Engineering Intern**, *Parallax Inc.*

Responsible for writing documentation and C code for educators using Parallax microcontrollers, as well as device drivers for other Parallax products. Also responsible for CAD and rendering of the company's flagship product.

Fall 2012 – **SAE MiniBaja**, *Olin College*.

Present Fundraising co-manager for 2013, in charge of the finances for Olin College's largest extra-curricular project team. Designed and assisted in fabrication of an adjustable shock mount, among other fabrication and part specification tasks. Design of the shock mount involved calculations of different driver weights to keep correct geometry, ride height and camber, as well as finite element analysis of structural members.

Fall 2012 – **Researching Electric Vehicles at Olin (REVO)**, *Olin College*.

Present Assisted in design and fabrication of an electric bike, a go-kart and a small educational robot, including studying design of three-phase power systems and controllers.

Spring 2013 **Machine Shop Assistant**, *Olin Machine Shop*.

Fabricated work-ordered parts, including those requiring welding and lathe or CNC mill operations. Design and construct mechanism for welding ventilation system.

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## Skills

Fabrication Manual Mill, CNC Mill, Manual Lathe, Sandblasting Cabinet, Cold Saw, Abrasive Saw, Tube Notcher, Horizontal and Vertical Band Saw, Drill Press, Router and Table, Hand Tools, Sheet Metal Shear and Brake, TIG Welder, MIG Welder, Stick Welder, Oxy-Acetylene Torch, Plasma Cutter

Computer Linux, Adobe Photoshop, LaTeX, Python, Matlab, Adobe Illustrator, Solidworks, GIMP, Java, C++, C, Arduino, Apple Motion, Adobe Premiere, Adobe Illustrator