

# Cyndia Cao

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## EDUCATION

**Massachusetts Institute of Technology** – Cambridge, MA  
B.S. in Mechanical Engineering | GPA: 4.9/5.0

Sept 2013 - June 2017

## SKILLS & INTERESTS

**Professional** mechanisms – power systems – rapid prototyping – robotics – precision design  
**Hardware** SolidWorks – mill – lathe – laser cutter – 3D printer – Arduino – mbed – raspberry pi  
**Programming** Matlab & Simulink – python – C/C++ – ROS – Visual Basic (Excel)  
**Communities** Summer Science Program – Pi Beta Phi – Tau Beta Pi – MIT Cheerleading

## WORK EXPERIENCE

**NASA Jet Propulsion Laboratory** – Pasadena, CA May – Aug 2016  
Advanced Large Precision Structures Intern

- Fabricated 1/20 scale engineering models of Starshade, an external occulter for finding exoplanets
- Explored various 3D printing & rapid prototyping methods for providing models with high fidelity

**Robot Locomotion Lab** – Cambridge, MA Jan – May 2016  
Undergraduate Researcher

- Developed component-level closed loop control along with higher-level ROS control of a soft robotic fish

**The Robot Garage** – Birmingham, MI Aug 2015  
Camp Counselor

- Coached middle school students in building LEGO robots to instill an interest & intuition for engineering

**Bell Helicopter** – Fort Worth, TX May – Aug 2015  
Control Laws Intern

- Created modelling tools for interpreting flight & simulation data to verify functionality of aircraft
- Proposed method to integrate medical rescue capability into the Short Light Single class Bell 505

**Institute for Vocational Education: Tsing Yi** – Hong Kong, China Jan 2015  
Mentor

- Brainstormed & sketched with students reliable, controllable mechanisms for robots playing badminton
- Wrote trajectory prediction code to complement others' work on birdie tracking and drive automation

**Magna Exteriors & Interiors** – Troy, MI May – Aug 2013 & 2014  
Product & Process Development Intern

- Created an energy efficiency calculator to evaluate benefits of active aerodynamic devices on vehicles
- Coordinated system testing & reports with labs (environmental, life cycling & aerodynamic)
- Researched latest manufacturing techniques & products and evaluated their relevance to Magna

## NOTABLE PROJECTS

**2.72 Elements of Mechanical Design – Desktop Lathe** Feb – May 2016  
FEA lead; reached tolerances of 10-15 microns on parts up to 0.5"

**MakeMIT – Hardware Hackathon** Jan 2016  
Worked on a StarCraft style game of robot laser tag; focused on electronics

**2.007 Design & Manufacturing I – Hack to the Future** Feb – May 2015  
Built a scissor lift that could raise 0.5 kg from 1 foot to over 5.5 feet

**6.270 Autonomous Robotics Competition** Jan 2014  
Developed board navigation code for a LEGO robot with periodic access to a GPS system

**FIRST Robotics Competition – Team 469 Las Guerrillas** Sept 2009 – Apr 2013  
Team captain; designed flexible conveyor system to bring Frisbees from ground to shooter  
World Finalists 2010 & 2013; State Champions 2010, 2012 & 2013