# Michael A. Bick

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US Citizen

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Dear Apple hiring manager,

Your *Technology Investigation Product Design Internship* posting found on the Georgia Tech CareerBuzz website interests me. A background on extra-curricular competition teams has given me extensive experience in 3D CAD, design for manufacture, and rapid prototyping, which would allow me to make meaningful contributions on your product design team.

I taught myself to use Dassault Solidworks as a seventh grader on a high school FIRST robotics team that had never used CAD before. Over the next six years, I improved my ability to rapidly ideate and design for ease of manufacture. Working with professional machine shops honed my ability to create unambiguous engineering drawings while the short, six-week build period taught me efficient design. In particular, I became particularly adept in both designing for and manufacturing with our in-house manual mill, manual lathe, and Haas CNC router. By my final year, each night I would design a prototype to solve a problem or test an idea, begin manufacturing on our CNC router at the next team meeting, and have a functioning concept by the meeting's conclusion. My skills would be invaluable to your team, where I could help create easy-to-manufature proofs of concept.

My work at Georgia Tech has cemented my desire to work in a design and development role. I thrived in "ME2110: Creative Designs and Design", a design competition class where my team created three complete iterations of our mechanism that placed 7th out of 60. By focusing our efforts on a CAD model that exploited laser-cut plywood, we were able to adjust and upgrade quickly and easily. I genuinely love design, iteration, design for manufacture.

My work at Georgia Tech has cemented my ability to use simulation and analysis to iterate even more furiously.

Attached you will find my resume; it contains further descriptions of my work on Georgia Tech's FSAE and robotics teams and my high school robotics team. I would be happy to answer further questions by email at `michael.bick@gatech.edu`.

Sincerely,

Michael Bick

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## Education

Aug 2016 - Present — **Mechanical Engineering** | GPA 3.58/4.0
**Georgia Institute of Technology**, Atlanta, GA
Dean's List
2nd Year Junior, Expected Graduation June 2020

## Academic Projects

Aug 2016-Present

### GT Motorsports | Powertrain Team Member

- Simulating engine dynamics with the eventual goal of increasing efficiency and low-end torque by lowering power-band
- Designing and manufacturing improved camshaft to match optimal lift profile

Aug 2016-Present

### RoboJackets | Team Member

- Lead design of a 3lb combat robot including CAD, chassis analysis, and weapon optimization
- Manufactured robotic mechanism components using precision machinery including CNC mills, lathes, and waterjets

Aug 2011-Jun 2016

### MilkenKnights FRC Team | Team Captain

- Managed the 6-week design and construction of a robot, including rapid prototyping, CAD, manufacturing, and control dynamics
- Created top-down Solidworks models of transmissions, gearboxes, and complex linkages
- Implemented position PID, velocity PID, vision tracking, motion profiles, and path following
- Trained students in CAD and operating precision machinery including a mill, lathe, and CNC router

Sept 2014-Jun 2016

### ASCE Bridge Building Team | Team Captain

- Lead design, analysis, simulation, and construction of a three foot, one pound popsicle stick bridge that withstood over 950 pounds of force

Sept 2014-Jun 2015

### Conrad Spirit of Innovation | Programming/Electrical Lead

- Designed, wired, and programmed LIDAR tracking system for a belt than warned the visually-impaired of threatening obstacles

## Technical Skills

| | |
|---|---|
| **CAD** | Solidworks(7 years), Autodesk Inventor(8 years), Top-down Design, Parametric Design, Surface Modeling |
| **Manufacturing** | Haas CNC, Manual Mill, Manual Lathe, Laser Cutter, Waterjet, 3D Printer |
| **Programming** | MatLab, Java, HTML, CSS, SASS, Android, Python, LaTeX |
| **Microcontrollers** | Arduino, NI myRio/roboRio(LabView) |
| **Software** | Vim, Adobe Illustrator, Word, Excel |

## Awards & Honors

| | | |
|---|---|---|
| Nov 2017 | 7th/60 | Georgia Tech ME2110 Design Competition |
| Apr 2016 | 2nd/42 | FIRST Robotics Orange County Regional |
| Mar 2015 | 3rd/41 | FIRST Robotics Ventura Regional |
| Mar 2015 | 3rd/53 | FIRST Robotics Utah Regional |
| Oct 2014 | International | Conrad Spirit of Innovation Semi-Finalist |
| Mar 2013 | 1st/65 | FIRST Robotics Los Angeles Regional |