

# MICHAEL A. BICK

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## EDUCATION

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## ACADEMIC PROJECTS

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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 components using precision machinery including CNC mills, lathes, and waterjets
- Created autonomous path planning and motion profile algorithm using Matlab

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

SEP 2014- JUN 2015

### Conrad Spirit of Innovation| PROGRAMMING/ELECTRICAL LEAD

- Designed for a belt than warned the visually-impaired of threatening obstacles
- Wired and programmed a LIDAR tracking system using an Arduino microcontroller

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## TECHNICAL SKILLS

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**CAD** Solidworks(7 years), Autodesk Inventor(8 years), Top-down Design, Parametric Design, Surface Modeling, 2D Engineering Drawings

**Manufacturing** Haas CNC, Manual Mill, Manual Lathe, Laser Cutter, Waterjet, 3D Printer

**Programming** MatLab, Java, Python, HTML, CSS, SASS, Android, L<sup>A</sup>T<sub>E</sub>X

**Microcontrollers** Arduino, NI myRio/roboRio(LabView)

**Software** Vim, Adobe Illustrator, Word, Excel

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## AWARDS & HONORS

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