Bonden Tucker

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EDUCATION

Rensselaer Polytechnic Institute, (RPI), *Troy, NY* **May 2029**
Bachelors of Science in Mechanical Engineering

SKILLS

Software: Solidworks, Siemens NX, Onshape, Fusion 360, ANSYS, Python
Design & Drafting: Technical writing, Technical drawings, Documentation, GD&T, DFM
Manufacturing & Machining: 3D printing, Lathe, Vertical Mill
Other: Microsoft Office Suite, Google Suite

RELEVANT COURSEWORK

Engineering Graphics and CAD, Engineering Processes, Thermodynamics, Fluid Dynamics, Solid Mechanics, Numerical Methods and Programming for Engineers

PROJECTS

Intelligent Ground Vehicle Competition (IGVC) Team, RPI Robotics Club **September 2025-May 2026**

- Led the Mechanical team on the chassis for a fully-autonomous driving robot, overseeing CAD modeling, part manufacturing, and assembly within a strict time frame
- Coordinated between other sub teams to integrate electronics, sensors, wiring, and cooling across the entire bot
- Structured and managed the mechanical design and fabrication timeline, establishing milestones and fallbacks to ensure full vehicle readiness ahead of testing

Compact Mini Competition Bot | Onshape **April 2024-November 2024**

- Designed a complex First Robotics Competition (FRC) robot at ¼ the volume of standard models, while maintaining full functionality, and high-level competitive play
- Modeled 52 unique mechanical parts and complex assemblies in Onshape, using parametric relationships and mate connectors to ensure accurate motion and clearance
- Optimized component packaging and center of mass to enhance structural stability and prevent tipping, addressing common problems in similar projects in the past

LEADERSHIP EXPERIENCE

Procurement Manager, RPI Robotics Club, RPI **Spring 2026**

- Coordinated between suppliers, school faculty, and club team leads to provide parts for 6 unique projects
- Streamlined procurement process, cutting procurement time and effort significantly
- Created organizational documents and folders to ensure all parts and bills are accounted for and on time

Design Team Lead, First Robotics Competition (FRC) Team 2158, Team 6377 **Fall 2023- Spring 2025**

- Taught CAD software and team design principles to 50+ beginners, strengthening my team's design capabilities
- Designed scenario-specific subsystems that interface and integrate with other team-member's work.
- Led a team of 4-5 people to design and assemble a fully functioning FRC robot that competed on state level for multiple years

VOLUNTEERING EXPERIENCE

VEX & First Robotics Competition (FRC) Competitions **Fall 2021-Present**

- Served as a Design Judge, evaluating team's engineering notebooks, interviewing teams on mechanical design choices, and scoring the execution of those ideas
- Served as a field helper, helping ensure smooth logistics, managing match queuing, arena reset, and field scoring under strict time constraints

WORK EXPERIENCE

Camp Champions Summer Camp Counselor, Marble Falls, TX **Summer 2025, Summer 2026**

- Managed logistics, safety, and wellbeing 24/7 for groups of 12-15 year olds across a 2 week term
- Awarded Staff Recognition Award (Selected out of 60)