# Matthew Zhang

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## EDUCATION

**University of Illinois at Urbana-Champaign** 4.00 GPA *Expected Graduation 05/2024*
Bachelor of Science in Mechanical Engineering

## WORK EXPERIENCE AND VOLUNTEERING

**Precision Planting** - *Mechanical Engineering Intern* *06/2022 – 08/2022*

- Prototyped, designed, and fabricated components of soil sampling system using Creo
- Followed product development lifecycle from initial redesign to released product to release in 3 months
- Developed wear and endurance testing setups for components of an automated soil sample analyzer

**Summer Robotics Course Instructor** *06/2021 - 07/2021*

- Developed a curriculum and kit focused on utilizing an Arduino microcontroller for robotics applications
- Taught and mentored a group of 12 students, recieved positive course evaluations and feedback

## ACTIVITIES

**Illini Solar Car** – *Mechanical Lead* *09/2020 - Present*

- Engineering a high efficiency solar-powered vehicle to compete in long-distance races
- Leading the team by facilitating meetings, helping team members, and setting agendas to keep progress on track
- Designing, optimizing, analyzing, and planning manufacture of vehicle's carbon fiber structural chassis

**iRobotics** – *Chassis Lead* *09/2020 - Present*

- Designed a 30-lb combat robot in SolidWorks to compete at a university competition
- 3D Printed a 1-lb combat robot which went on to win first at a competition
- Facilitated design discussions and contributed expertise to optimize robot design
- Machined mechanical components on a manual lathe and mill

## PERSONAL PROJECTS

**3-lb Combat Robot** *07/2022 - Present*

- Built and competed with a 3lb combat robot with a high-speed horizontal blade weapon
- Modeled and CNC machined robot chassis and integrated RC electrical components for control

**Quadruped Robot Dog** *06/2021 - Present*

- Designing, constructing, and programming a four legged "robot dog" from scratch
- Utilizing inverse and four-bar linkage kinematics for accurate positioning of limbs
- Creating components in SolidWorks, assembling robot from 3D printed parts and commercial hardware

## SKILLS

**Computer Aided Design:** Certified SolidWorks Professional (CSWP); Comfortable with Creo, Autodesk Inventor, Fusion360, and Siemens NX

**Programming:** Experience programming in Java, MATLAB, C, Python,

**Other Software:** Proficient with Microsoft Office, PrusaSlicer, GrabCAD, Git

**Experience:** Manual Mill/Lathe machining, Rapid prototyping using 3D printing and laser cutting, CAM and CNC programming and operation, soldering, electronics, and embedded system programming, design for manufacture of injection molded, sheet metal, and 3D printed parts, ANSI engineering drawings and GD&T standards