

VEXU Climb Bot

Professor Smith
PDS300 Production Studios
University of Advancing Technology
Tempe, Az

Designed/Built/programmed by Team UAT1
Led by Alexa Tuchtenhagen, Marcus Frazier, Levi Terry

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What is *VEXU Climb Bot*?

Project Overview

The VEXU Climb Bot was designed to compete in last season's VEX Robotics competition, with a primary focus on climbing and defensive play. Our robot was engineered to scale the bar as part of the end-game challenge while also acting as a defense robot to disrupt opponent scoring and support allied robots. This project pushed our mechanical design, strategy development, and programming skills as we worked to build a reliable climbing mechanism and durable drivetrain suited for competitive gameplay.

Goal

Our goals as a team have changed a LOT over the semester. At first we wanted to get UAT back on the map after the last VEX team died out around covid, but NOW we want to *LEARN* as much as possible, *CREATE* as big as we can, and *INNOVATE* anything we set our minds to.

Team

Lead: Alexa Tuchtenhagen

Lead: Marcus Frazier

Lead: Levi Terry

Programmer: Alexander Britain

Programmer: Jacob LeVine

Programmer: Mikel Eddie

Builder: Terrance Harris

Builder: Sean Johnson

Support: Dylan Maxwell

Support: Aliven

Support Antonio

Bill of Materials

- Vex Brain
- Vex Motors
- Vex connector cables
- Metal
- Sprockets
- Gears
- PLA filament
- Nuts/bolts/washers
- Spacers
- Axils
- Rubberbands
- Batteries
- Controller

What Went Well?

Our team successfully designed, built, and operated a working Ring Bot despite limited prior experience in VEX and no dedicated test field. We developed functional code, achieved reliable movement, and created a mechanism capable of picking up and placing rings onto the stake system. Throughout the process, we learned quickly, adapted to new tools and strategies, and got our robot performing under challenging conditions. Overall, it was a strong learning experience that helped strengthen our mechanical and programming skills in a competitive environment.

What Could Be Changed?

There are several things we would improve for future seasons. First, having proper tools, newer materials, and ordering parts earlier would have streamlined the build process and prevented delays. Access to a practice field and involving more hands-on support would also have increased efficiency and performance.

Additionally, we would focus on placing team members in roles that aligned better with their strengths instead of working solo on tasks that could have benefited from collaboration. Late-night gear lessons at 3 a.m. made it clear that better planning, time management, and preparation for competition are essential. In short, improved organization, earlier preparation, and smarter use of skills would have elevated the project significantly.

Other Documentation

[Climb Practice](#)

[Comp plus Climb](#)