

# VEXU Ring 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 Ring Bot*?

### **Project Overview**

The Ring Bot was designed for the VEXU competition to collect rings and place them onto a scoring stake. Our robot was engineered with a mechanism capable of picking up rings efficiently and depositing them either by pulling the scoring stake along with us or by backing up to position it correctly. This project focused on precision control, mechanism design, and strategic gameplay, allowing our team to experiment with scoring techniques and optimize ring-handling performance during matches.

### **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 built and ran a functioning robot without prior experience in VEX and without access to a test field. We developed basic code, achieved consistent movement, and even attempted the climbing challenge — which we managed to accomplish successfully a few times. Overall, we learned quickly, adapted to new tools and systems, and got our robot operational under challenging circumstances.

## **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**

[Milestone 1](#)

[Milestone 2](#)

[Milestone 3](#)

[Test ring pick up](#)

[Learning about gear ratio](#)

[Ring pick up testing](#)