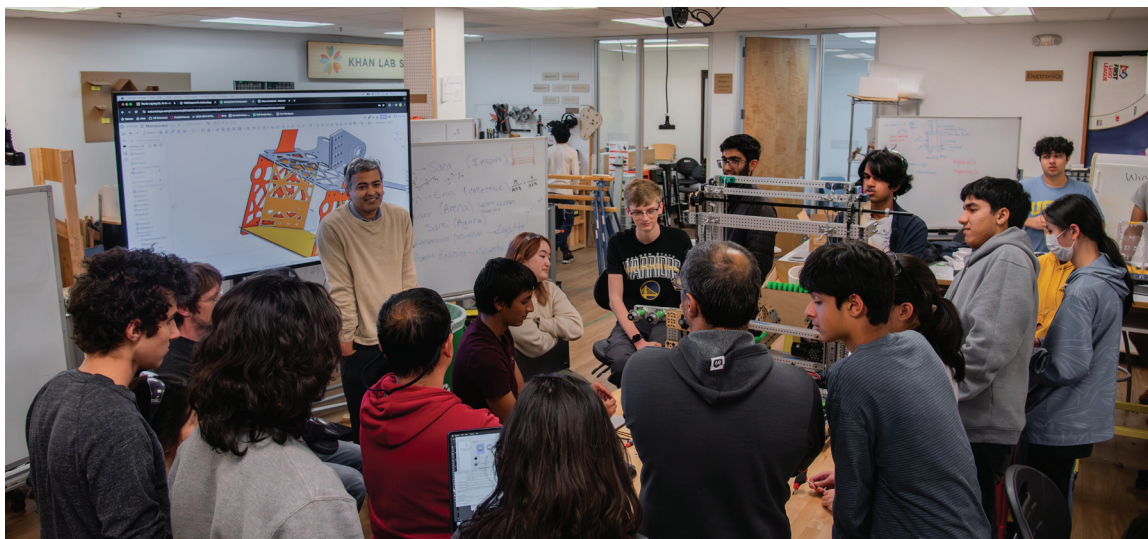




As we wrap up weeks 4 and 5 of our robotics journey, our team continues to make significant progress. From finalizing crucial components to enhancing our strategic approach, every subteam is pushing forward.

Build & Design

The Build & Design team achieved a significant milestone in week 4 by completing the V1 robot. They rebuilt the elevator, mounted the functioning manipulator to it, and integrated these components with the chassis. The fabrication team performed a crucial role, replacing most of the wooden plates with custom cut aluminum ones. In week 5, they continued refining and testing the robot.



Rookie Track

The rookie track, led by Nihal V. and Sophia D. continued progress in their technical education. Learning from Mentor Eric L., they completed a battery workshop and put their knowledge into practice, wiring up our brand new 2025 competition batteries. The team also received valuable knowledge in electrical signal interference and started designing a battery cart for competition storage.



Elevator

The elevator team hit a major milestone in week 4: finishing the construction of the elevator and successfully mounting it to the robot. The group also made improvements by replacing inserts with metal and final parts. In week 5, they continued to improve the rigging and began code testing. Unfortunately, some mechanical components broke, resulting in a slight setback. Nevertheless, the team is optimistic about completing the final version by early week 6.



Coral/Algae Manipulator

The Coral/Algae Manipulator subteam made great progress in week 4, assembling the final version of the manipulator using CNC-machined plates. The team integrated the manipulator with the elevator.

Hang

The hang subteam made substantial progress in week 4. CNC-machining the aluminum plates for the final version, they mounted a tentative working version to the robot. The hang subteam is currently working on assembling and completing the final version.

Fabrication

Fabrication continued their work, marking a milestone by cutting their 50th part this week. With a steady stream of components flowing to the build team, the pit case components are temporarily on the back burner.

Ground Algae Intake

The intake team, led by Ansh T., made a variety of strategic decisions this week. Following the removal of their wooden prototype from the robot, they focused on refining the CAD design. Through this process, they discovered that the robot was slightly overweight, prompting the team to explore ways to lighten the plates. The team also adjusted the mounting to avoid conflicts with the hang assembly. In week 5, they conducted static stress simulations in Fusion 360, leading to the addition of L brackets for greater collision resistance. The team also decided to use $\frac{1}{4}$ inch thick mounting brackets for system functionality after collisions.



Programming

The programming team continued making notable progress in week 4, successfully implementing path planning software, completing the drivetrain code, and even adding a fun touch by programming the drivetrain to play music. The team also worked on revising the subsystem code to account for various pivots and the elevator, though some more work is required in this area. In week 5, they worked on getting subsystem code functioning. While most systems are nearly functional, some component breakages caused minor setbacks. The team also made progress on autonomous routines, though they encountered issues with swerve drive controls in the simulator.



Vision

In week 4, the vision team achieved breakthroughs in their algae tracking capabilities. After extensive refinement, the team developed an accurate distance formula that can track the algae's distance from the robot. This advancement is a game-changer for robot functionality as it enables more sophisticated commands such as orienting the robot towards algae, or aligning with the reef during competitions. Looking ahead, the vision team plans to actually implement these new commands. They also intend to explore improved algae detection models, leveraging larger and more detailed datasets. In week 5, they finalized the limelight placement with the Build team, incorporating it into the CAD. While focus shifted to autonomous and subsystem code, the team plans to start testing an AutoOrient command using vision to rotate the robot towards algae in the coming week.

Business & Marketing

Both the marketing and business teams were busy creating connections these past 2 weeks. The marketing team put the finishing touches on merchandise designs and brainstormed gift bags that can be shared with other teams at competition. They've also begun ordering merchandise, working on pit case branding, and developing an entrepreneurship binder. On the other side, the business team focused on reconnecting with past sponsors and initiated plans to form new business connections with other robotics teams. The goal? Building strong relationships both on and off the field.



More frequent updates can be found on the [Antares Instagram](#).