



## Why We Program

Of course programming is necessary to have a functioning robot, but besides needing a program to run in competitions we also program in a specific way. We program to make the controls and functions of the robot maximally intuitive for its drivers and handlers.

## How We Program

### Driver Controlled

During the driver controlled period our goals are twofold. First, we try to incorporate as much intelligent control as possible. Sensors, encoders, gyroscopes, and myriad other sensors can make the driver controlled performance much better than it could ever be purely under the control of the drivers. This can take the form of rather basic things, such as set positions on motors. On our lift for example, we have programmed a feature that allows the driver to merely press one button for up and one button for down, and then the lift will rise or fall without further control, so that they can focus on other tasks while the lift moves.



Even with intelligent control, it is absolutely crucial that the drivers can still operate their controls quickly and effectively. For this reason, we do something rather unique: we custom make the Driver Controlled Program according to the drivers' preferences. Instead of programming the robot and teaching the drivers, we make all the controls and features work exactly like the drivers want. This way, it is maximally intuitive for the drivers, leading to optimal performance.

### Autonomous

In autonomous our goal is always to be able to complete all of the tasks efficiently and consistently. As of now, we are able to achieve most of these tasks. On the depot corner, we are able to score 70 points by descending, sampling the mineral field, and scoring the team marker into the depot. On the crater corner, we are able to score 65 points by descending, sampling the mineral field, and parking partially in the crater by extending our collector arm into the crater. This not only scores points, but also sets us up perfectly for collection at the start of the Driver Controlled period.

