

Tips for being a Programmer at Comp

1. Troubleshooting

- Whenever facing unknown problems at comp, the first thing to do is check the match logs and replay them in AdvantageScope. This will likely reveal the nature of the issue you face, whether it be excessive CPU usage or driver error.
- When you figure out the issue and believe that it is fixed, it is generally a good idea to simulate and make sure that it works. This is especially useful when the change you made impacts the logic of the robot or the autonomous paths.
- If the issue is CPU usage (usually characterized by driver input delay or comms issues), you can check to see what is taking too much load by profiling with VisualVM. This will give you insight as to what is taking too much load (for us, it was either vision or logging-related) and allow you to fix it before the next match.

2. Talking to Judges

- Usually, only selected pit crew members talk to judges, so if you're one of them, make sure you review the whole code structure and be aware of the kinds of tools and techniques we use to automate our robot. Judges love to hear about how we can effectively reduce human error.

3. Drive Team

- If you're on drive team, there are a couple of things you should know how to operate on the DS laptop:
 1. Driver Station: Know how to connect and organize controllers in the USB devices tab, open and check logs and console messages, and disable the robot.
 2. Pathplanner/Choreo (if we are using it): Sometimes, there is discussion between alliance partners of which team will run which of their autos, and it's good to be able to show your partners what path your autos take to help maximize autonomous point gain. Make sure you can navigate the autos and paths, and also make sure you know what the autonomous and path names are.
 3. PhotonVision: If this issue is not fixed, **please make sure to toggle auto exposure. Please.** Also, it's probably better to close any camera feeds to ensure it doesn't eat into the bandwidth.
 4. Elastic: This is your dashboard, and if you configure it effectively, you can display important information to keep an eye out for during a match. Know how to open and use Elastic and drag in new widgets.

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