Robotics Debugging in Practice

Reproducing failures with rosbag, Foxglove, and simulation

1. Play Back a Rosbag to Reproduce an Issue

Description: Load an existing rosbag and replay it to observe localization or navigation behavior.

Focus on identifying one clear failure point using timestamps rather than rerunning live tests..

2. Visualize Sensor Data in Foxglove

Description: Open a rosbag or live stream in Foxglove and inspect key sensor topics.

Compare clarity and productivity against standard visualization tools like RViz.

3. Label an Event with Key-Value Metadata

Description: Create a simple event at a specific timestamp (e.g., collision or localization loss).

Attach key-value pairs to describe what went wrong and why it matters.

4.Simulate an Active Navigation Scenario

Description: Run a short navigation task in simulation to reproduce an issue seen in real data.

Observe how active control differs from passive tasks like localization analysis.

5. Map a Client System Decision Trade-off

Description: Write down one use case comparing a ROS-based software stack versus a PLC-based system.

Clearly note the trade-offs between convenience, controllability, and certification needs..

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