

Helloooo....

My name is Merin Philip

Blahhh blahh blahhhhh

## Error Sources in Odometric Data

Even though odometry is simple and fast, it is **not perfectly accurate**. Various types of errors can accumulate over time:

### 1. Wheel Slippage

- If a wheel slips (especially on smooth, wet, or uneven surfaces), the rotation does not correspond to actual movement.
- Causes wrong estimation of distance or direction.

### 2. Uneven Surface or Rough Terrain

- If the ground is not flat, wheels may bounce or tilt, leading to wrong measurements.
- The robot might move in ways that are not detected properly by wheel sensors.

### 3. Imperfect Wheel Calibration

- If the wheels are not exactly the same size or the encoders are slightly inaccurate, the robot's estimation of distance and rotation will be wrong.
- Small calibration errors accumulate into large position errors over time.

### 4. Mechanical Wear and Tear

- Over time, wheels, gears, and sensors can wear out or get loose.
- This results in inaccurate readings of rotations and distances.