

# Modeling and Simulation in Robotics Workshop

Breakout Summary Slides

Team 5

Breakout 3

# Consensus

- Build the starting block
  - Create and distribute example environments, datasets, and models.
    - eg. Computer vision datasets
  - Create a repository for simulation datasets that are shareable.
  - Build into programs the requirement to contribute models/datasets
  - "How to" guides, tutorials, examples, simple simulations.
- What is the taxonomy of simulation data and models
  - What types of benchmarks are required for perception, control.
    - Crowdsourced data generation. Filter datasets based on popularity.
- Maintenance is not fun but necessary

# Contention

- **Benchmarking**
  - Even identical physics systems behave differently. What is benchmarking trying to achieve?
  - How to handle uncertainty?
- **System Id is difficult and miserable.**
  - There is no simple, automatic method for system id.
- **Standardization**
  - Can we have models that can be shared?
  - No incentive to do this.
  - Would be great if each robot came with a simulator or model. Even if it's a simple simulator.
- **Incentivize model development**
  - How do you verify or validate generated models

# Extra

- Combine data and simulation
  - New ways to collect data and large amounts of data.
  - Standardize meta-data.
- Physics models are not accurate enough
  - Learn offset models to account for incorrect models. Learn hidden state.