

**Motivation:**

- Learning may be used for human-robot policy transfer
- Robot learning (from demonstration) requires data
- Collecting data in the lab may be time consuming and biased
- Thousands of human-hours are spent online playing games

Objective:

Leveraging a distributed gaming environment, we plan to utilize human computation (crowdsourcing) to generate massive datasets exemplarizing desired robot control policies. From these data we will derive autonomous controllers using Robot Learning from Demonstration.

Technical Approach:

RGame is a server-client architecture that enables remote users to control robots over the internet. By physically separating the user from the robot, both the robot's environment and the user's perception thereof can be tightly controlled.

Using an abstract, modular approach, RGame can be extended to new robot platforms and control devices, for use by other researchers. Further, client users can choose and adapt interfaces for comfort and ease.

Results:

- RGame has been beta tested (intranet only)
- Multiple robots and control devices have been instantiated
- Successful learning with nonparametric regression

Future Directions and Areas Needing Attention:

We propose to use RGame to perform comparative studies of learning algorithms on data from multiple robots and users. Further, different user interfaces can be examined, or researchers in one lab could perform experiments on a robot located elsewhere.

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