

Robot's Decisions with a Neural Network

By

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CS 790R

Motivation



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Challenges

- What do we need to consider if we deploy a robot to harvest in the field?
- How can we control the robot to
 - Do the right thing?
 - Pick the right choice?
 - Go the right way?

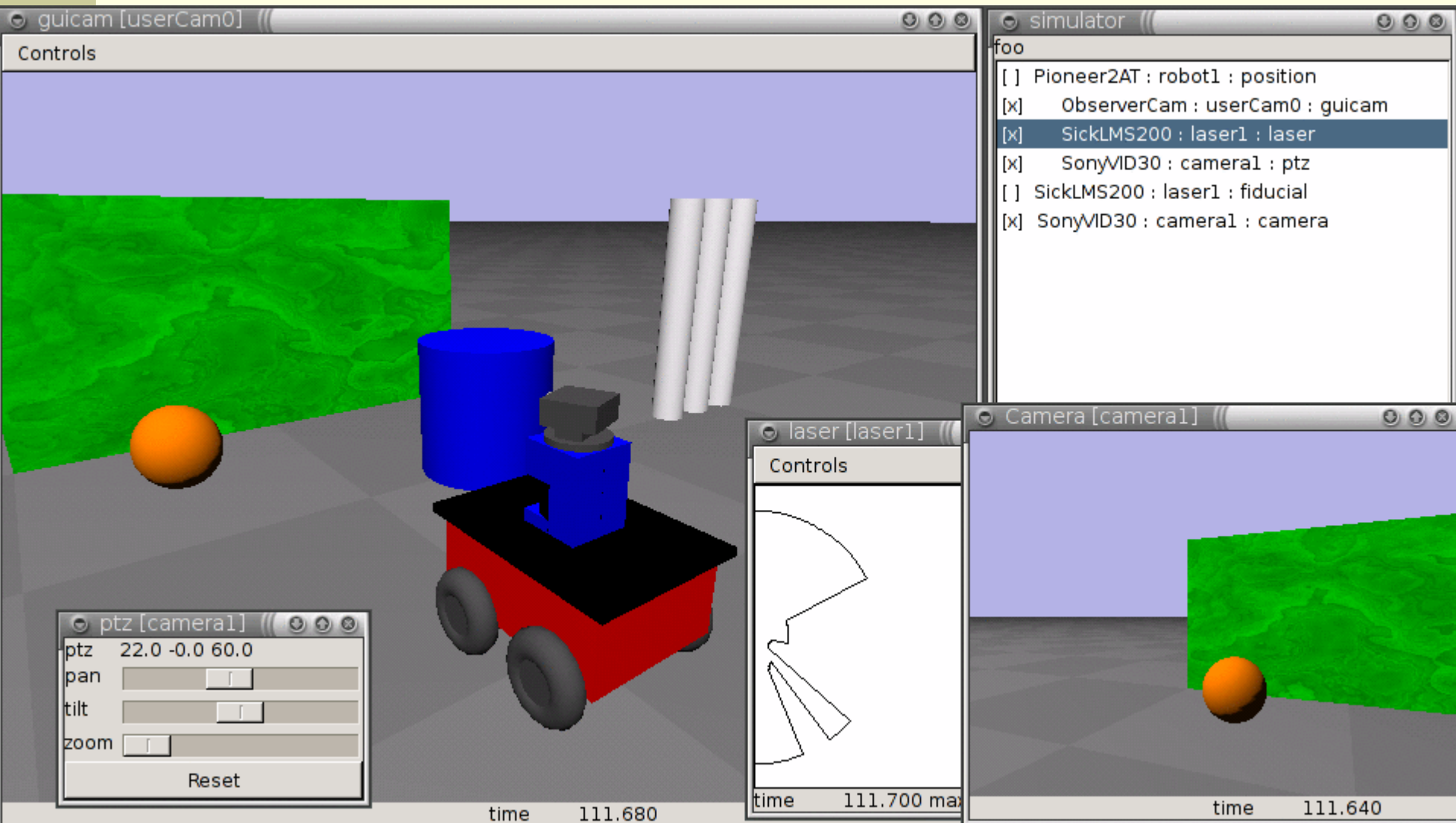
Implementation

- Rule-Based System (A new kind of science)
 - Control next stage of the robot after a particular task is completed.
- Inhibition – Activation (Animal's Pattern)
 - Making a decision
- Reaction – Diffusion (Waves)
 - (Not yet in this project)
- Neural Network (Training or Learning)
 - Control the level of Inhibition - Activation

Simulation

- Using C++ Language to program the robot's controller
- Testing the controller with Player + Gazebo Simulator
- If successfully testing under simulation, port the controller to the real robot and test again.
- Download simulation from
 - <http://playerstage.sourceforge.net/>

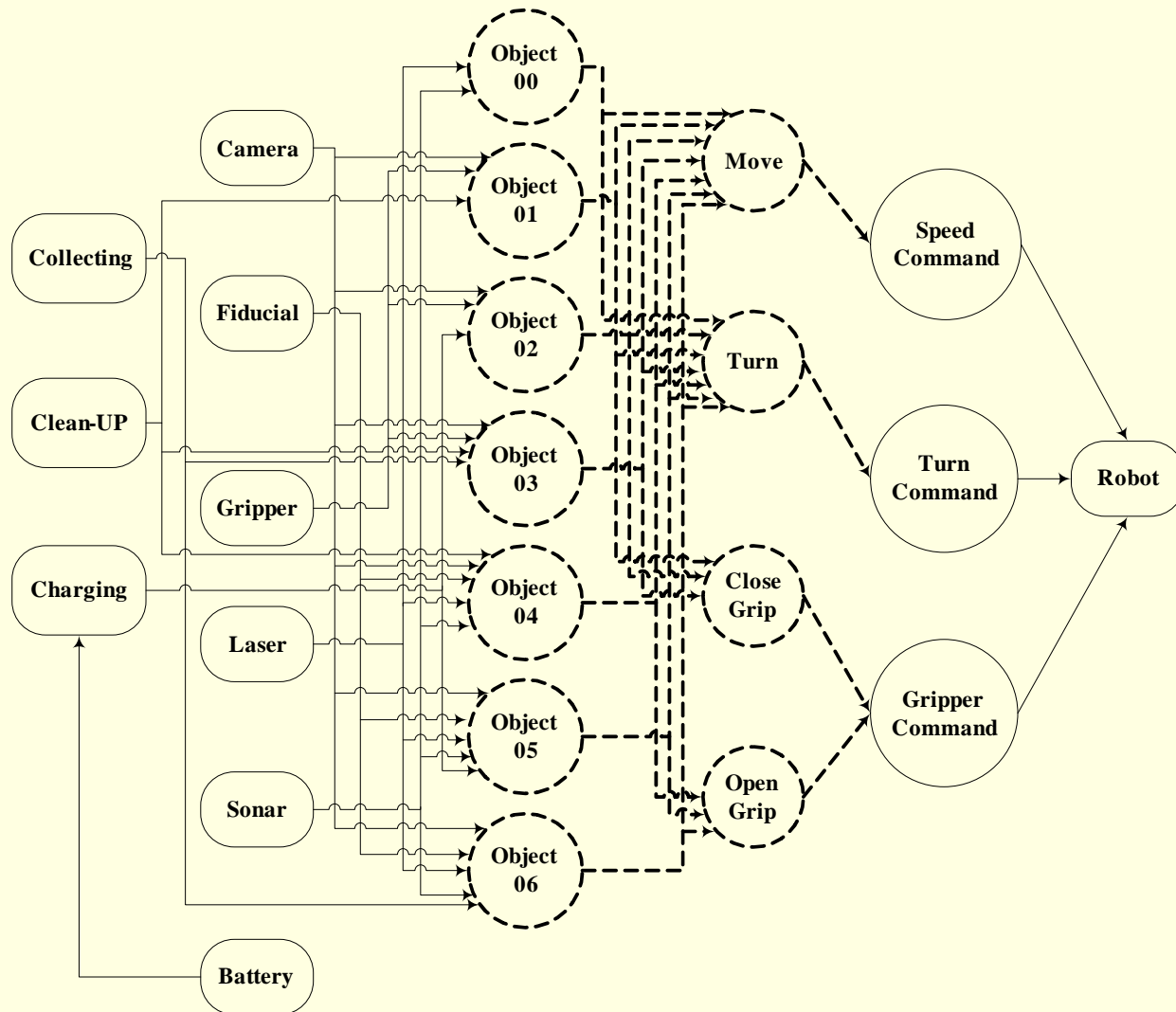
Gazebo Screen Shots



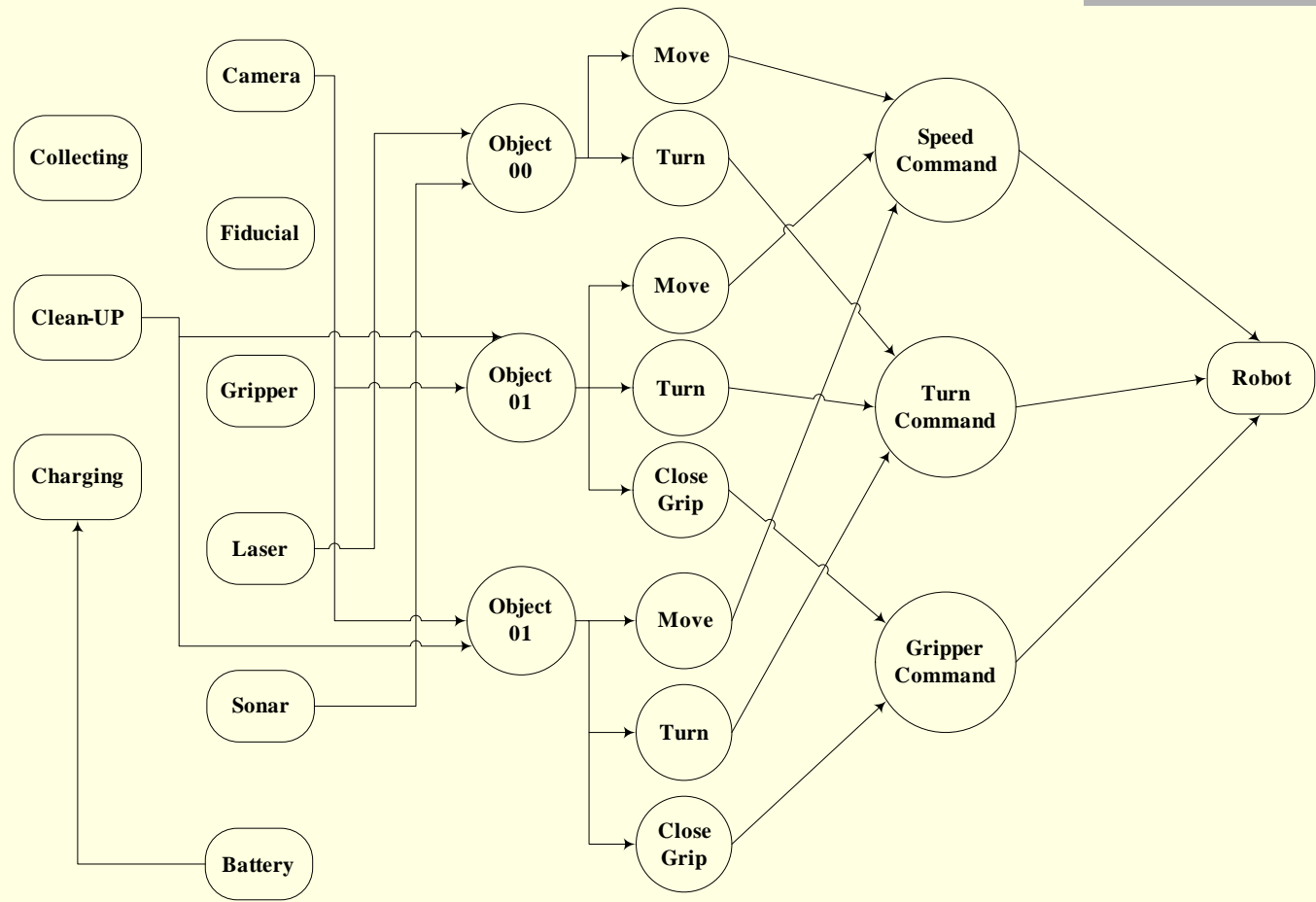
Status

- Need Further Discussion with Professor such as scope and more detail.

Network Template



Example of Complete Network



Example of network created when the robot receives the image of two object_01s and non others through camera



Comments & Questions

