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CS 2699 - Husky Robotics Research

ROS Project Proposal

Overview

- Stop is base orientation, robot stops and execution, default position for instruments, any command can be executed from this state
- Robot should execute command based on verbal command or verbal stating number
- Three tiers of commands: beginner, intermediate, advanced with goal being to execute all of beginner and most of intermediate, testing waters with advanced

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Table of Robot Commands

#	Audio Command	Audio Response	Camera	Arm Response	Robot Movement
1	Stop/Halt	"Stopping…"	Move to default position	Move to default position	Stop moving
2	Wave	"Hello"	Align robot to user	Wave (generic arm movement)	Turn to face user
3	Point	"Pointing…"	Align robot to user	Point at user	Turn to face user
4	Greeting	"What is your name?" "Hello <name>"	Align robot to user		Turn to face user
5	Knuckles	"Knuckles	Align robot to user	Orient for knuckles	Turn to face user
6	High five	"High five"	Align robot to user	Orient for high five	Turn to face user
7	Handshake	"Shake my hand"	Align robot to user	Handshake, slight grip, up and down movement	Turn to face user
8	Come to me	"Here"	Tracks where user is		Turn to face user, move to user, stop in front of user
9	Follow me	"Following…"	Tracks where user is	Point at user that we're following	Follows user, continuously turning to face them
10	Hand me something	"Give it to me" "Thanks"	Align robot to user	Extend open arm, grasp object	Turn to face user
11	Come take this	"Coming…" "Give it to me" "Thanks"	Track where user is, align robot to user	Extend open arm, grasp	Turn to face user, move to user, stop in front of user

12	Find Color("R/G/B")	"Searching for color <RGB>" "Pointing…"	Find Color, align robot to color	Point Arm	Turn to face color
13	Pick something up?(spooky hard one) *ya this one would be an end goal, requires a lot of precision and alignment, not to mention judging size, distance, etc...		Find object, orient robot to put object in position	Pick up object	

*Not all boxes in the table are filled in