

THE ROBOT 2.0:

When Social Robots meet the Cloud



Website:
MarilynMonrobot.com

Twitter:
@heatherknight

My Background

- Personal Robotics Group, MIT Media Lab
- NASA's Jet Propulsion Lab
- Aldebaran Robotics
- Carnegie Mellon's Robotics Institute
- Marilyn Monrobot

(robots, robots, and more robots)

What's new about Web 2.0?



Social Networks & the Cloud

What's new about Robot 2.0?



Social Networks & Robots & the Cloud

Frontiers of Interface Design

The Sensate Bear, MIT Media Lab



Frontiers of Space Science



Robonaut / Astronomy Magazine

Frontiers of Entertainment



Frontiers of Healthcare

Autom of Intuitive Automa



What can Robots offer Web 2.0?

Embodiment

Integration into Human Environments

Expression and detection

What can Robots offer Web 2.0?

Embodiment : *they can act on the world and are physically present*

Integration into Human Environment: *they perform work in the target locations that matter most*

Expression and detection : *they can communicate with the physical cues we find naturally compelling and are better equipped to understand us*

What can Robots offer Web 2.0?

Embodiment : *they can act on the world and are physically present*

Integration into Human Environment: *they perform work in the target locations that matter most*

Expression and detection : *they can communicate with the physical cues we find naturally compelling and are better equipped to understand us*

What can Robots offer Web 2.0?

Embodiment : *they can act on the world and are physically present*

Integration into Human Environment: *they perform work in the target locations that matter most*

Expression and detection : *they can communicate using physical cues we find naturally compelling and are better equipped to understand us*

What can Robots offer Web 2.0?

ROBOTS

- Embodiment
- Integration into human envts
- Expression & detection

WEB 2.0

- Off-board processing
- Connectivity
- Shared data storage



Lion tracking



Photo © Larry Fletcher

Multi-Robot Coordination

Communicate with each other or via humans



Behavior Sharing

When robots join social networks



Telepresence

Making Your Presence Robotic

A new generation of robots is making it possible to be, in effect, in two places at once. From anywhere with a computer and a Wi-Fi connection, the operator can use the robot to hear, talk, see and be seen and move around a workplace far away. Early adopters include doctors, technology workers and supervisors. The robots range in size, features and price. Here is a sampling.

	Vgo (made by Vgo Communications)	Tlr (RoboDynamics)	Texai (Willow Garage)	RP-7i (InTouch Health)	QB (Anybots)
HEIGHT	4'0"	3'8" or 4'2"	5'2"	5'5"	2'6" to 6'0"
TOP SPEED	3.75 m.p.h.	2.4 m.p.h.	1.5 m.p.h.	2 m.p.h.	3.5 m.p.h.
DISPLAY SIZE	7"	8" (touchscreen)	15"	15"	3.5"
FIELD OF VIEW	60 degrees	55 degrees	140 degrees	360 degrees	130 degrees
CONNECTION	400 kbps	500 kbps	500 kbps	600 kbps	500 kbps
PRICE	\$4,995	\$10,000	Not available	Not available	\$15,000
UNIQUE FEATURES	Text-to-speech; camera auto-tilts based on drive speed; remote monitoring headlights and auto-docking to the charger.	Web-based controls; can use own video like Skype, Google Vid Chat, MSN, etc.	Technology agnostic (can pilot on Windows, Mac or Linux), secure connection between pilot and Texai (SSL and VPN tunnel).	FDA-cleared, connects directly to Class II medical devices including electronic stethoscopes, otoscopes and ultrasound.	Untippable, two-wheel drive design; stabilized video; Web-based controls.

Sources: the companies

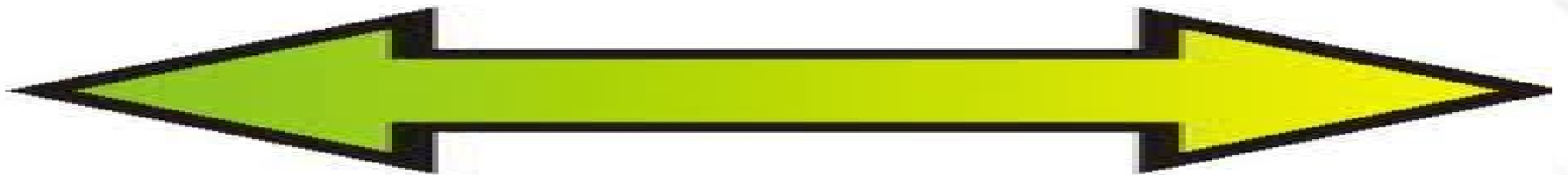
THE NEW YORK TIMES

Sliding Scale of Autonomy

Fully
autonomous

Shared
Autonomy

Remote
controlled



Grandma?



THE ROBOT 2.0:

A Frontier for Technology



Website:
MarilynMonrobot.com

Twitter:
[@heatherknight](https://twitter.com/heatherknight)