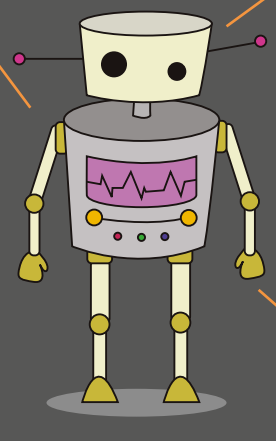
TAMK Social Robotics



TORSO

SONARS & LASER SENSORS measure distances & detect obstacles

GYROSENSORS detect which way the robot is - robot's "sense of balance"

BATTERY for POWER!

CAPACITIVE SENSORS for sensing touch

HEAD

HD CAMERAS for object detecting

MICROPHONES for voice input

INFRARED EMITTER/RECEIVER for remote communication

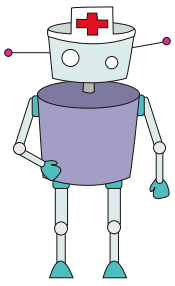
SPEAKERS for voice output

HANDS

PREHENSIBLE HANDS for grabbing things

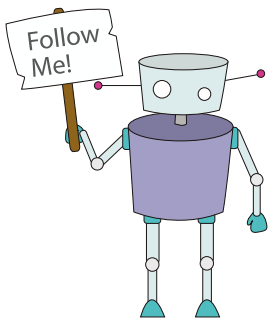
FORCE RESISTIVE SENSORS for sensing how much pressure is being applied to the hands

Social robot applications



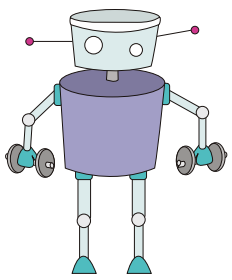
Nurse Robots

Robots are already keeping company and comforting us. In future they will nurse us in hospitals and help us with rehabilitation. They know if you are feeling better or worse even before you do!



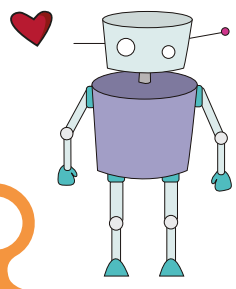
Guide Robots

No more boring museum visits, no more getting lost in a new city, thanks to the social guide robots! These robots will help you when you need guidance and it will actually know what things interest you and things that don't.



Training Robot

Out of shape? This robot will know what is the best training just for you! It will know your training regime and how fatigued you are. It will cheer and motivate you through your workout.



Well-being Robot

Your well-being robot will go with you everywhere and it will keep you company. It recognizes if you are looking stressed or tired and it will recognize changes in your medical state, even warn you about an upcoming seizure.

Introduction

Social robot is an autonomous robot, which communicates with humans or with other autonomous devices. Social robotics is a mix between many fields of robotics, like service and mobile robots.

Big research areas are speech and emotion recognition as well as the artificial intelligence. The industry is growing fast and the application areas are almost limitless.

They are already used as toys and household appliances. In future they might be taking care of our health and even be our friends!

Fun Facts

1. There are currently 4,000 ROBOTS serving in the US Military
2. The original idea behind creating robots was to use them do the WORK of humans
3. ASIA is believed to have more than half of all the robots in the world
4. Honda's ASIMO is one of the most advanced humanoid robot ever built, costs about $1 million
5. Japan Hopes to replace 3.5 million workers with robots by 2025

History of Robotics

1940 — William Grey Walter starts researching autonomous robots

1973 — In Waseda University, in Tokyo, Wabot-1 is built. It was able to communicate with a person in Japanese and to measure distances and directions to the objects using external receptors.

1986 — Honda starts research on humanoid robots which primary task is to communicate with humans

1999 — Sony releases AIBO, the robot dog cabable of communicating with humans

2000 — After several versions, Honda releases ASIMO, social humanoid robot

2007 — MIT Media Lab starts developing "MDS" (Mobile/Dexterous/ Social) robots

2008 — First production version of research robot Nao released by Aldebaran Robotics

en.wikipedia.org/wiki/Social_robot | robotic.media.mit.edu/projects/robots/leonardo/overview/overview.html | aldebaran-robotics.com/en/Discover-NAO/Key-Features/hardware-platform.html | en.wikipedia.org/wiki/History_of_robots | world.honda.com/ASIMO/technology/2011/specification/ | www.dailygalaxy.com/my_weblog/2007/04/robots_robotics.html