RI-MAN
RI-MAN

sensors for seeing, hearing, and smelling
RI-MAN

sensors for seeing, hearing, and smelling

~320 pressure points
RI-MAN

sensors for seeing, hearing, and smelling

~320 pressure points

{ padded body }
RI-MAN

- sensors for seeing, hearing, and smelling
- ~320 pressure points
- padded body
- weight limit = 80 lbs
NURSEBOT PEARL
NURSEBOT PEARL

communicates through touch screen
NURSEBOT PEARL

- communicates through touch screen
- can recognize speech and follow patients
NURSEBOT PEARL

- Communicates through touch screen
- Can recognize speech and follow patients
- Fully-customizable face
ACTROID-F
ACTROID-F

cameras
ACTROID-F

cameras
can mimic operator’s facial expressions and gestures
ACTROID-F

cameras

can mimic operator’s facial expressions and gestures

can speak and mimic breathing
CHALLENGES
CREATING A BELIEVABLE CHARACTER

- Embodied cues
  - gestures, vocal stress, facial expressions, posture, proximity, etc.
- Needs to meet our expectations
UNCANNY VALLEY

A hypothesis put forward by Japanese Roboticist Masahiro Mori in 1970

As robots become more and more lifelike, their likeability increases until a vague point (the Uncanny Valley) is reached.

At this point, all the empathy we had for the robot vanishes; instead, we just find it eerie.
CAUSES?

Mismatched parts
Subconsciously, we don’t like looking at a human likeness and seeing parts that don’t belong
- synthetic hair
- doll eyes

When we spot something that is obviously fake, our minds refuse to tolerate it.
BUT WHY?

Most popular theory: Evolution!
The negative feelings we experience stem from a healthy fear of death.

Our brains are programmed to avoid corpses and sickly-looking people.

Seeing a robot’s not-quite-alive face triggers this ancient instinct to back off.
PATIENT SAFETY

It is not enough for the machine to be able to effectively communicate with people.

Robots must be programmed to handle humans with care.