

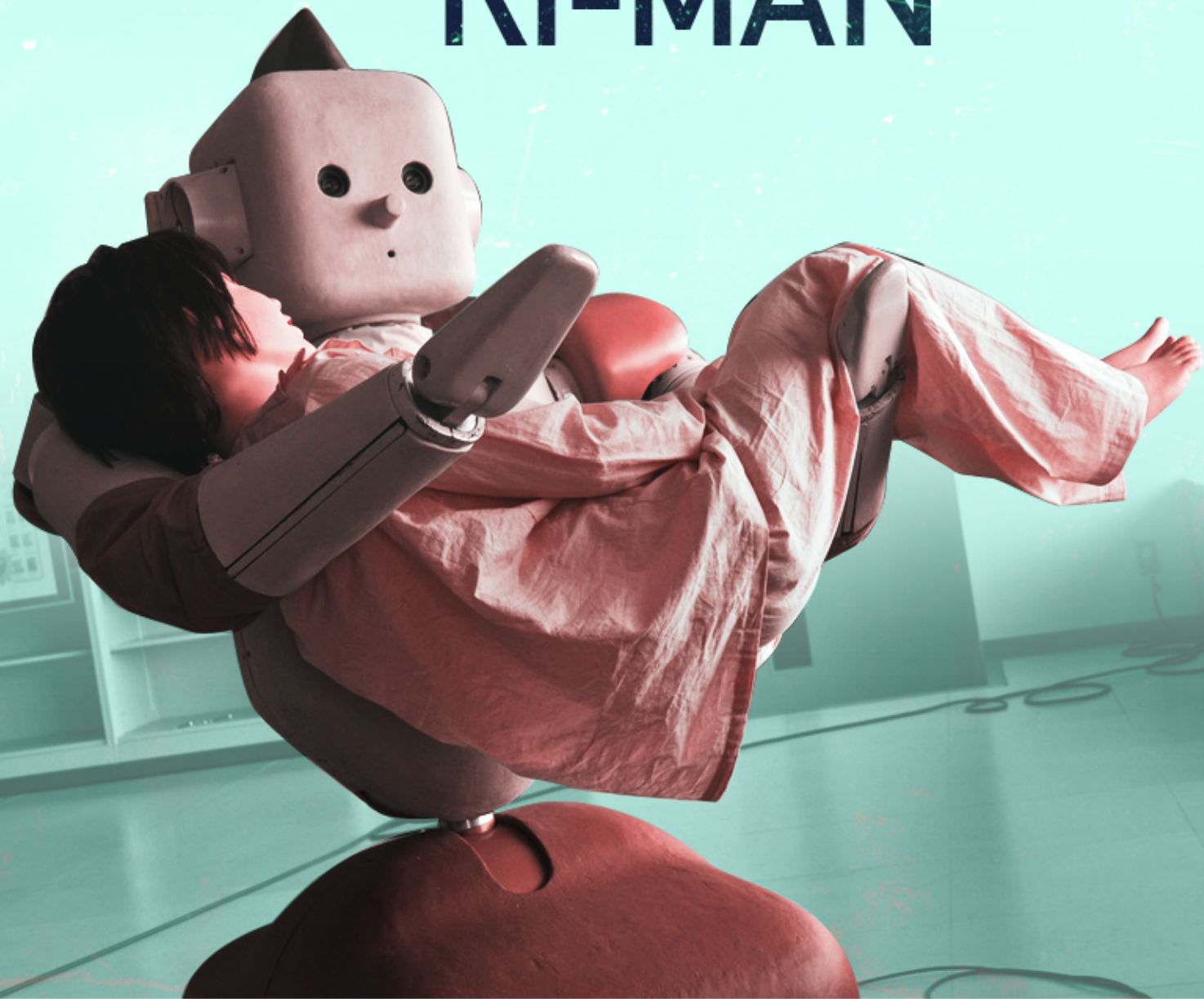


ROBOTICS MEDICINE



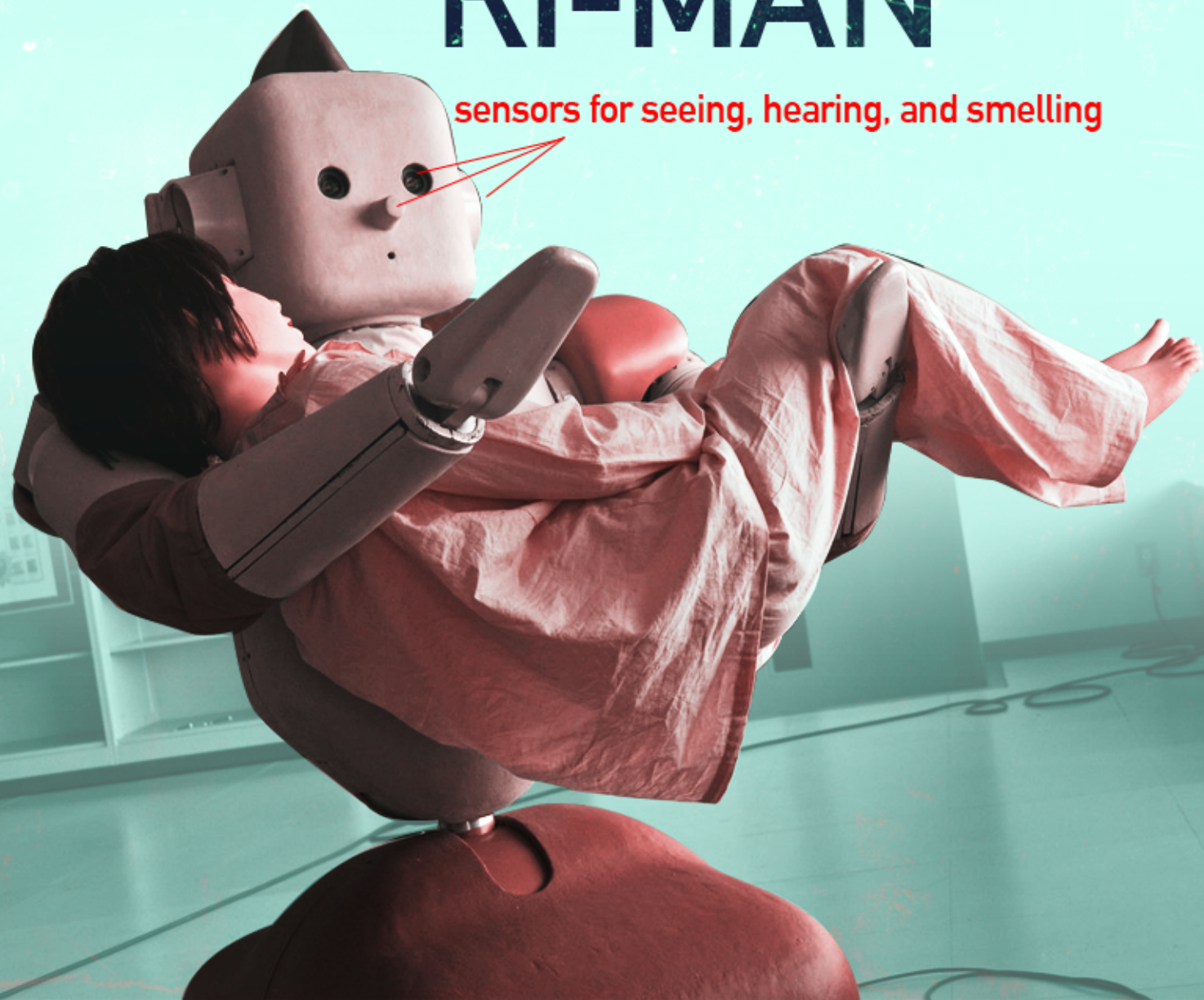
MONIKA TUCHOWSKA

RI-MAN



RI-MAN

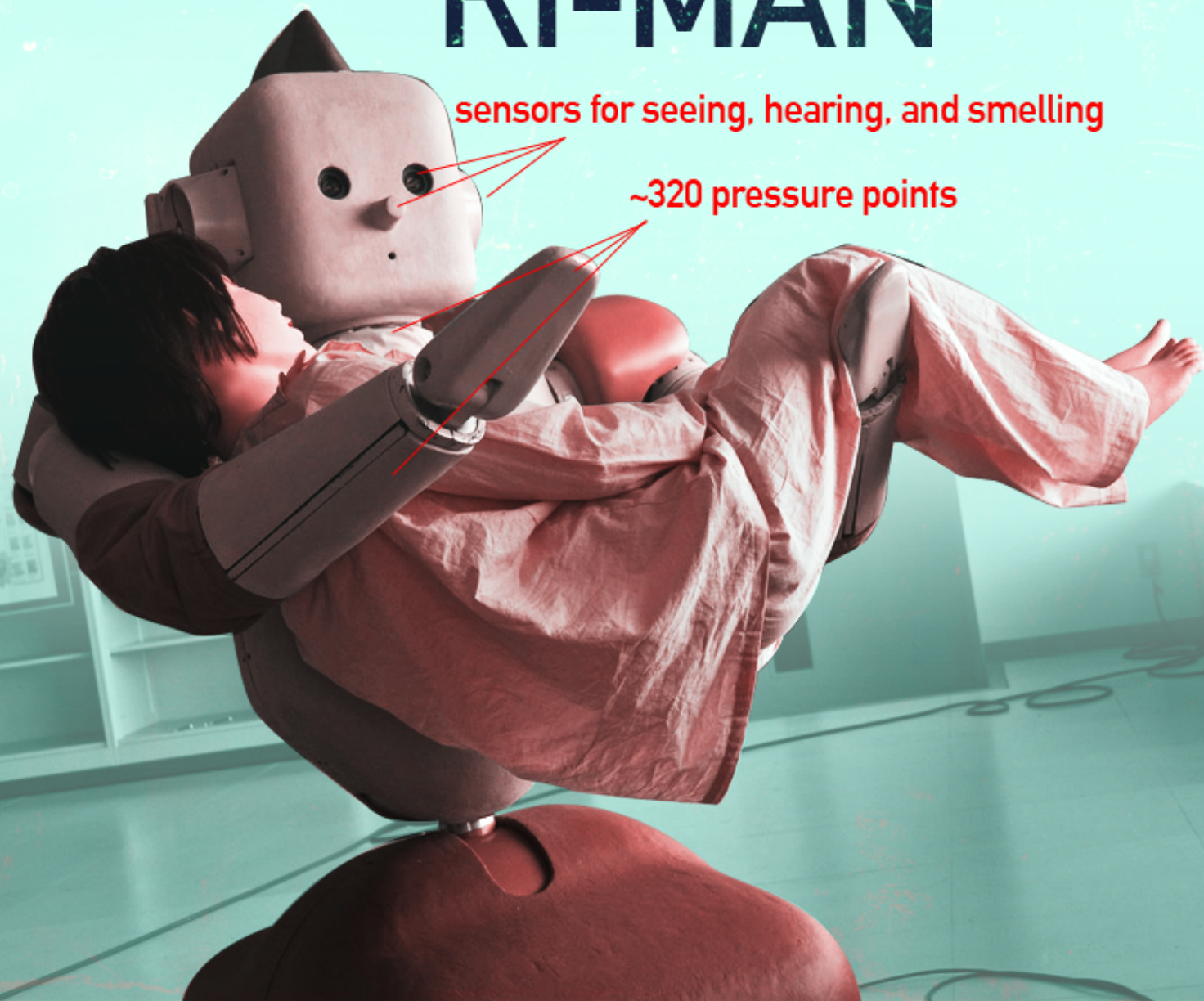
sensors for seeing, hearing, and smelling



RI-MAN

sensors for seeing, hearing, and smelling

~320 pressure points

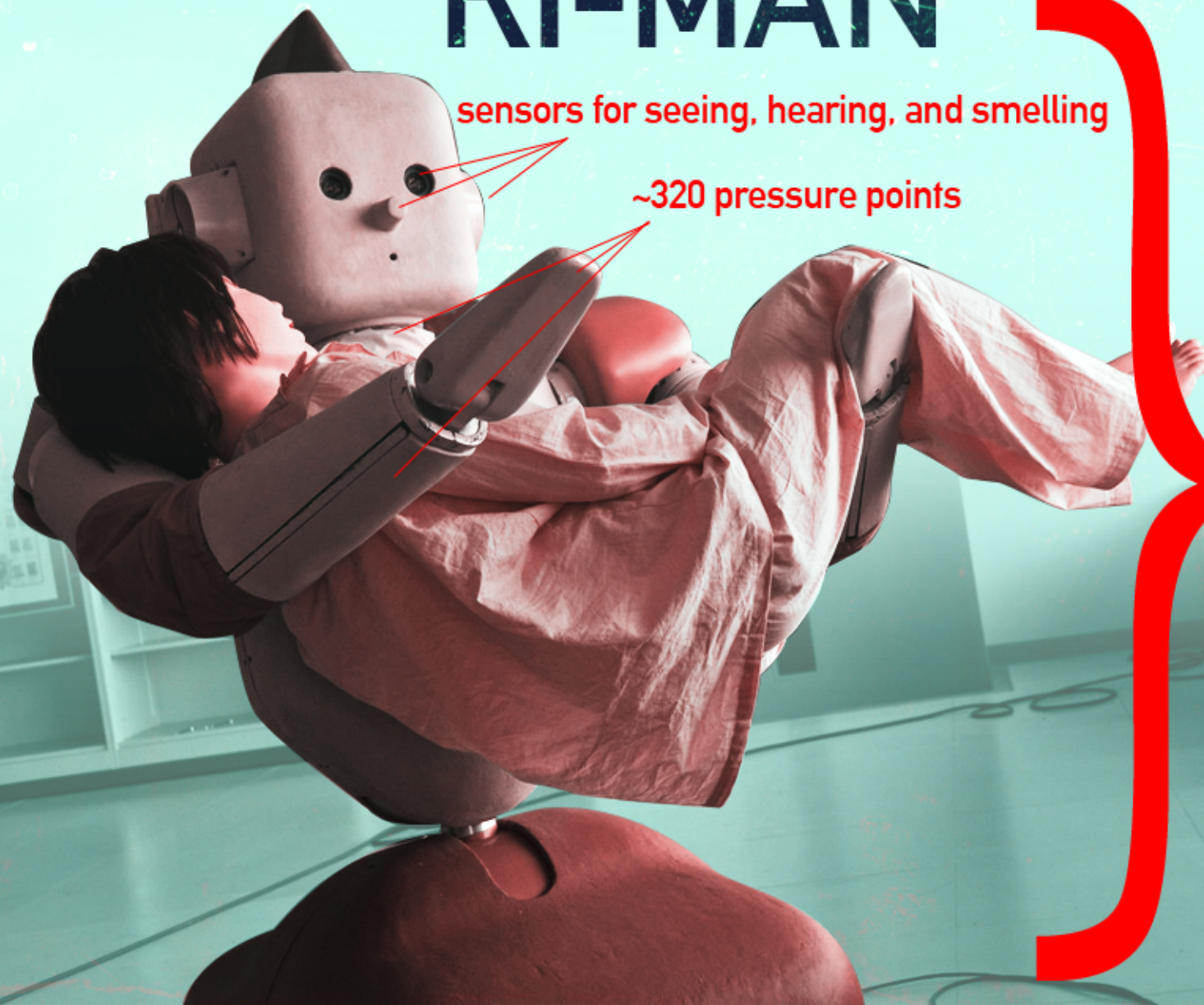


RI-MAN

sensors for seeing, hearing, and smelling

~320 pressure points

padded
body



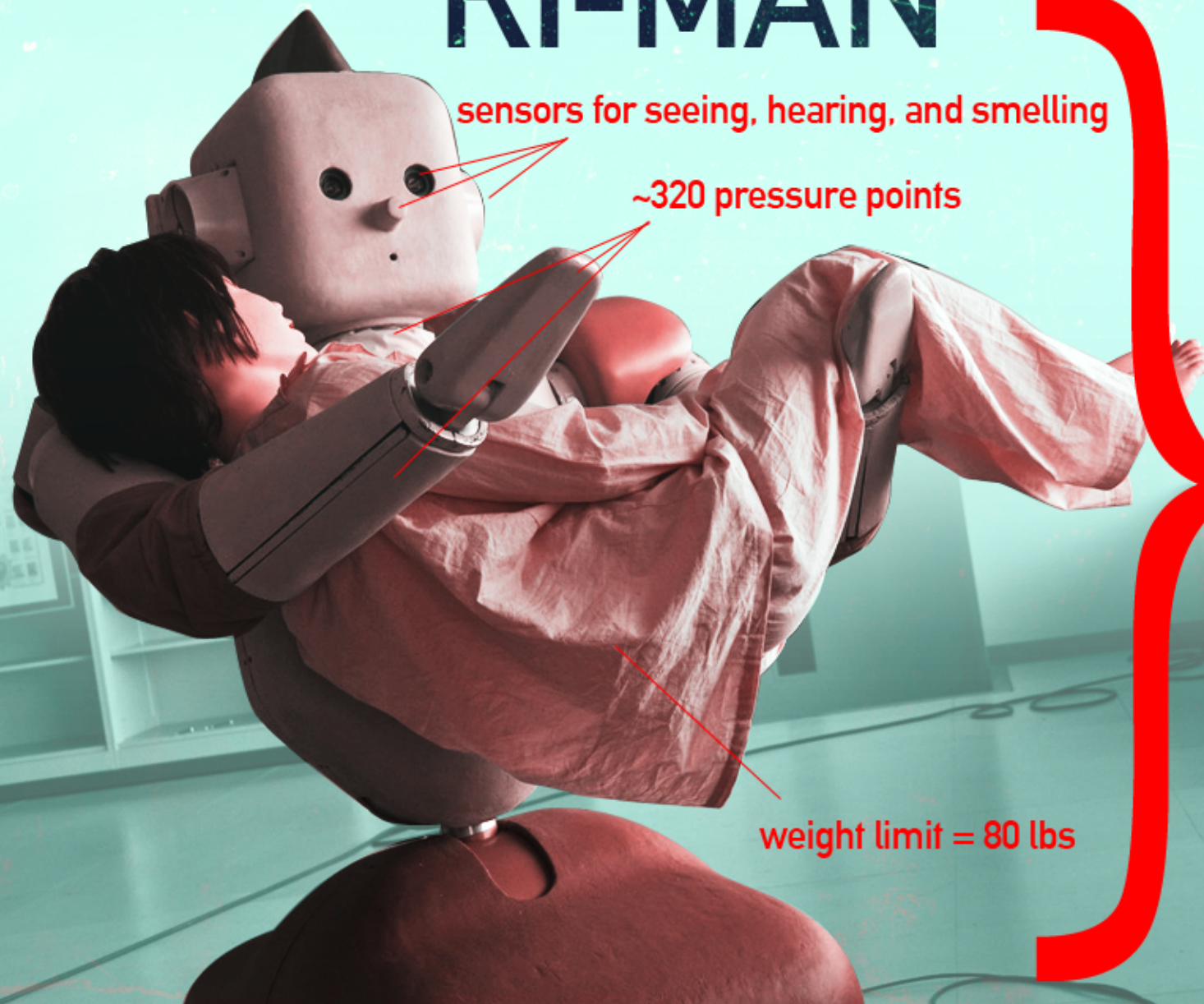
RI-MAN

sensors for seeing, hearing, and smelling

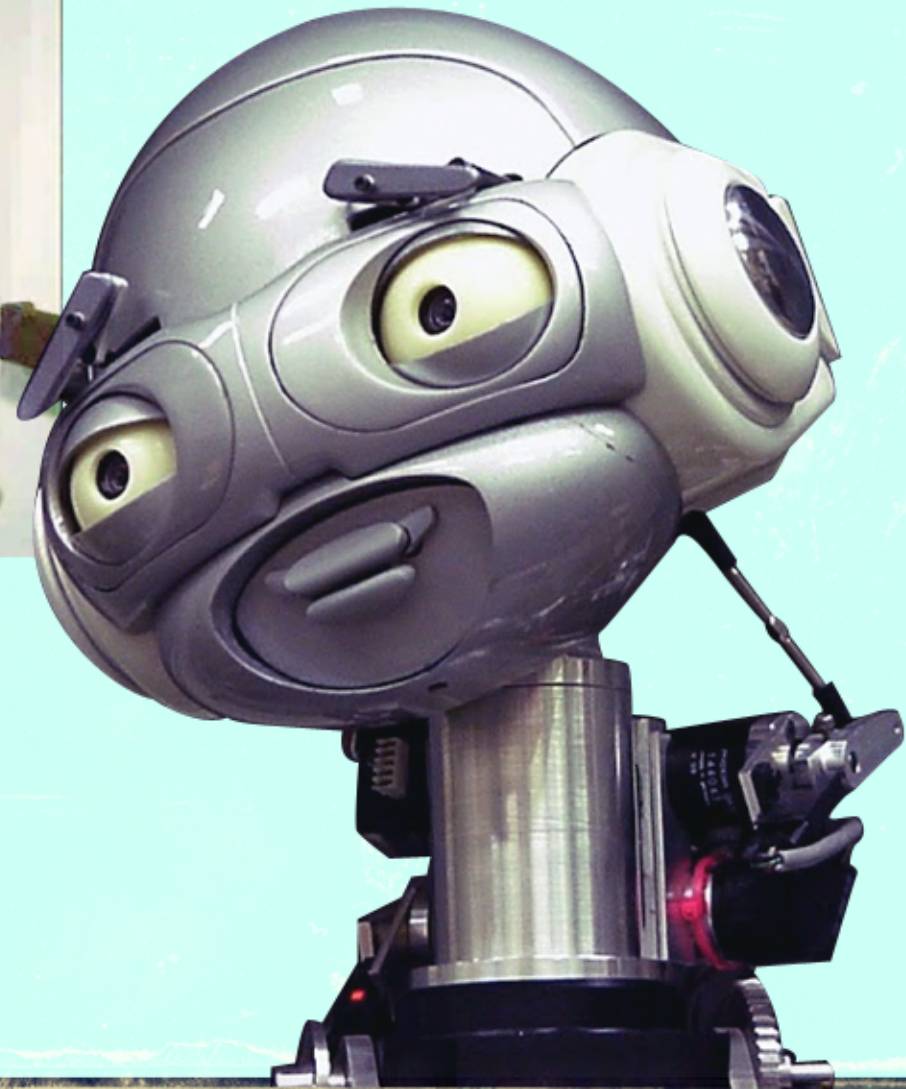
~320 pressure points

padded
body

weight limit = 80 lbs



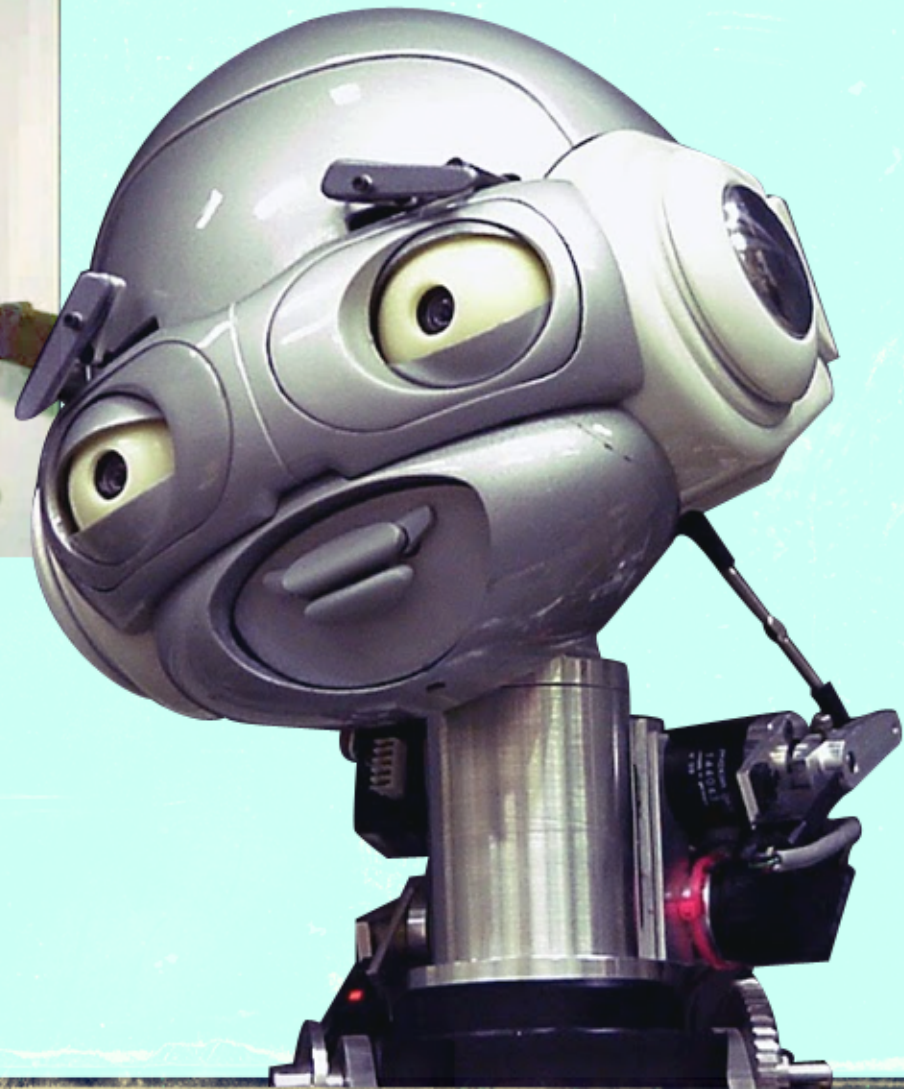
NURSEBOT PEARL



NURSEBOT PEARL



communicates through touch screen

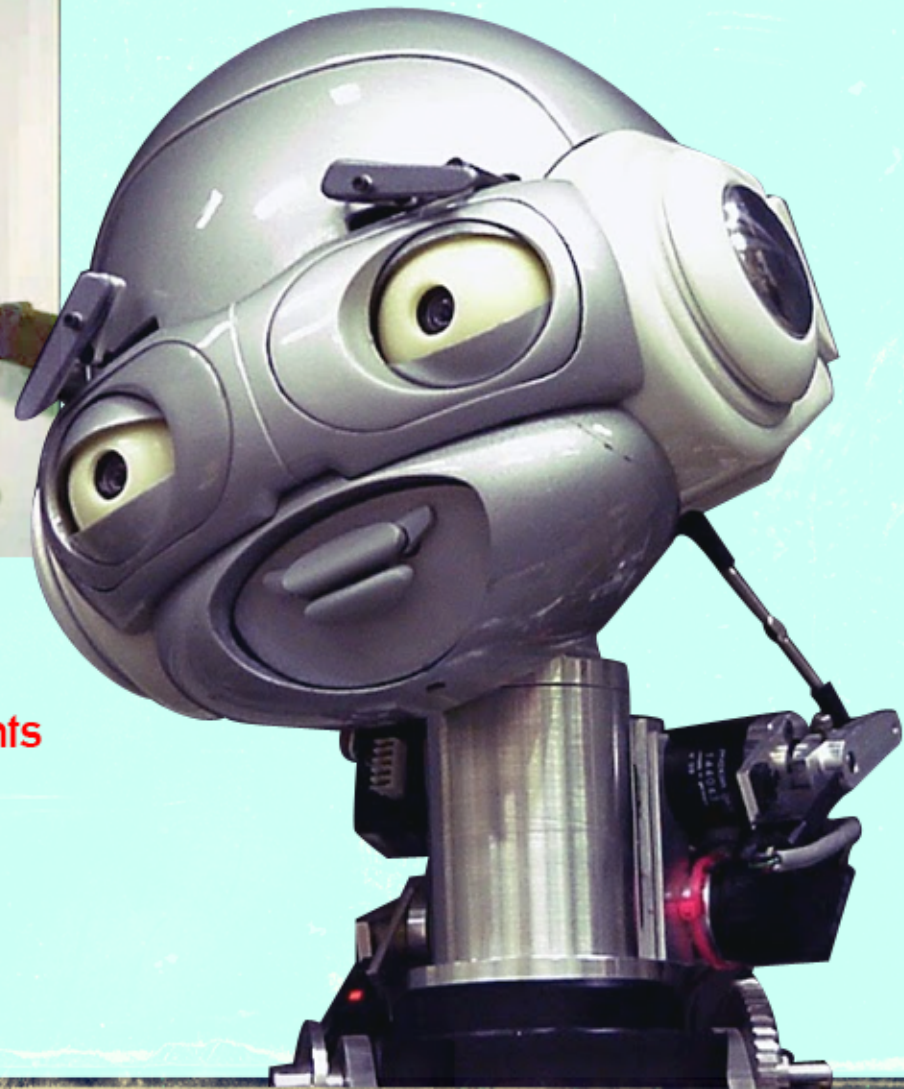


NURSEBOT PEARL

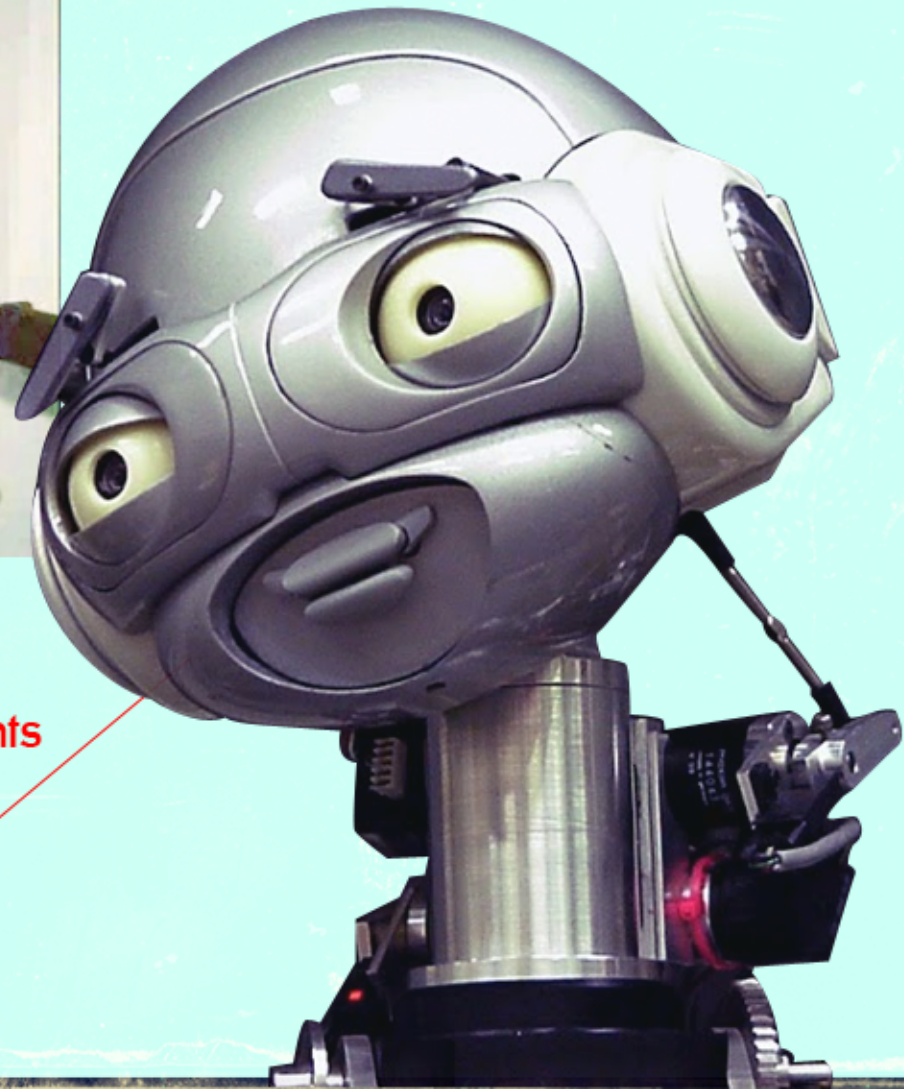


communicates through touch screen

can recognize speech and follow patients



NURSEBOT PEARL



communicates through touch screen

can recognize speech and follow patients

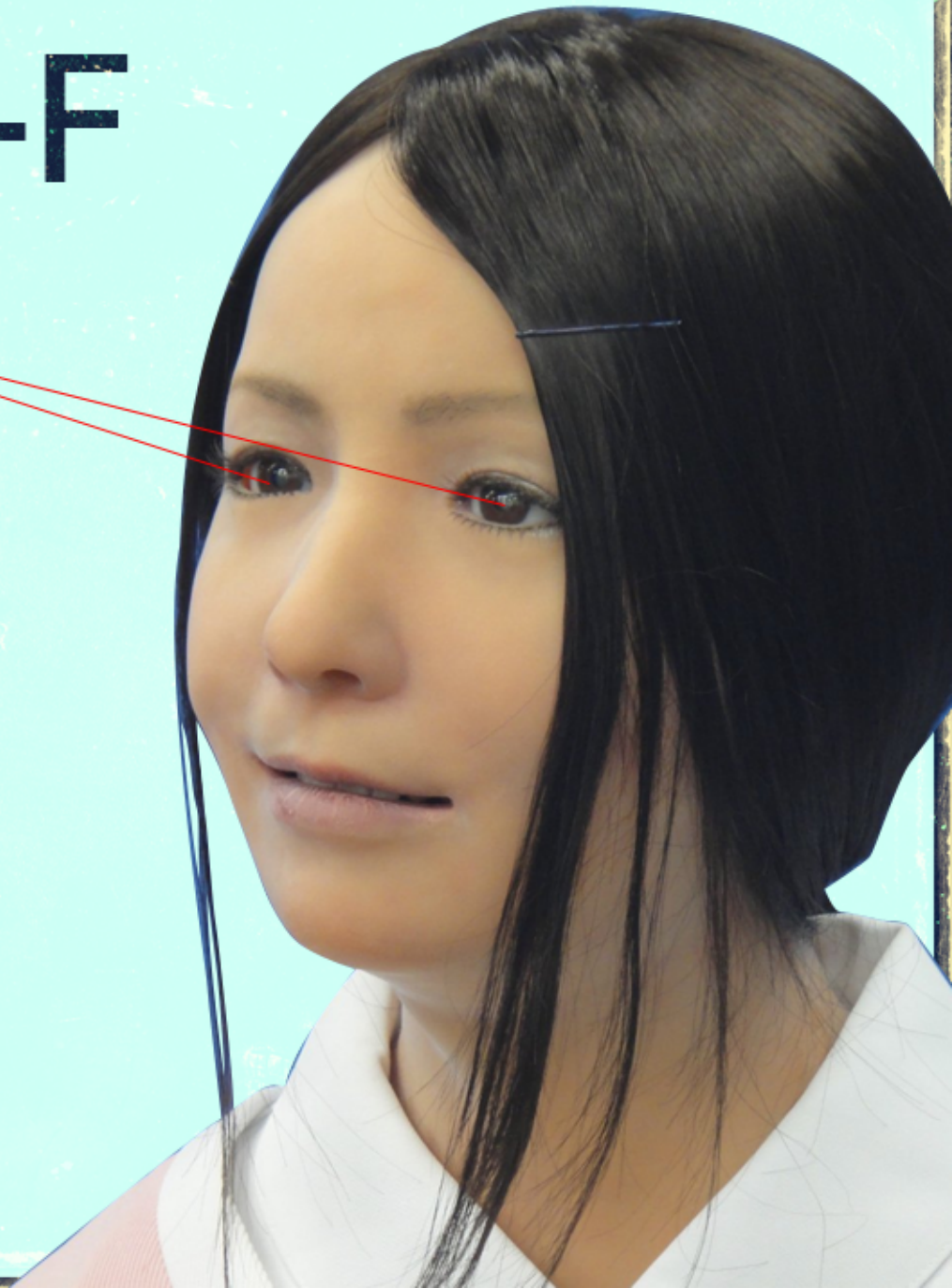
fully-customizable face

ACTROID-F



ACTROID-F

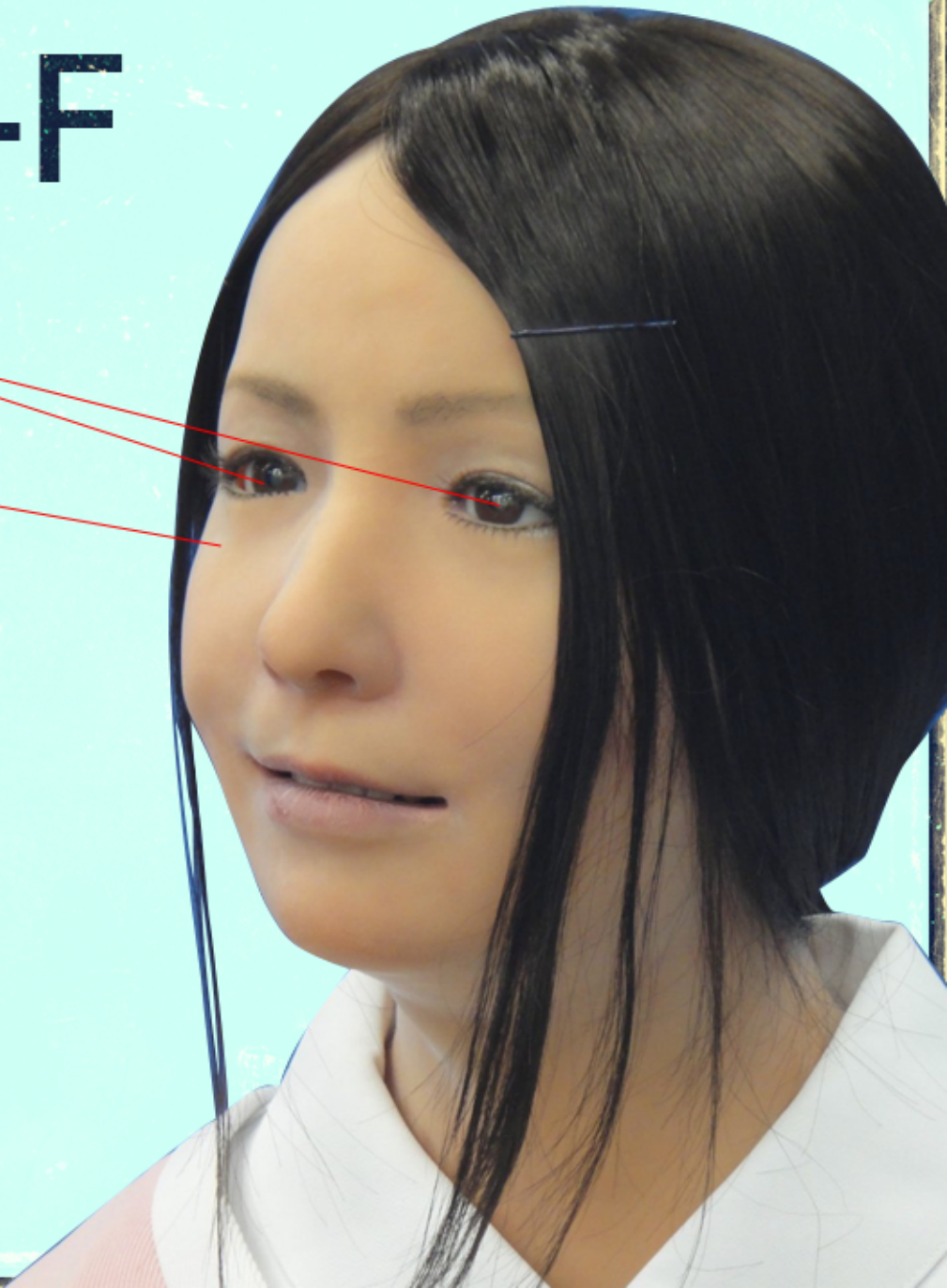
cameras



ACTROID-F

cameras

can mimic operator's facial
expressions and gestures

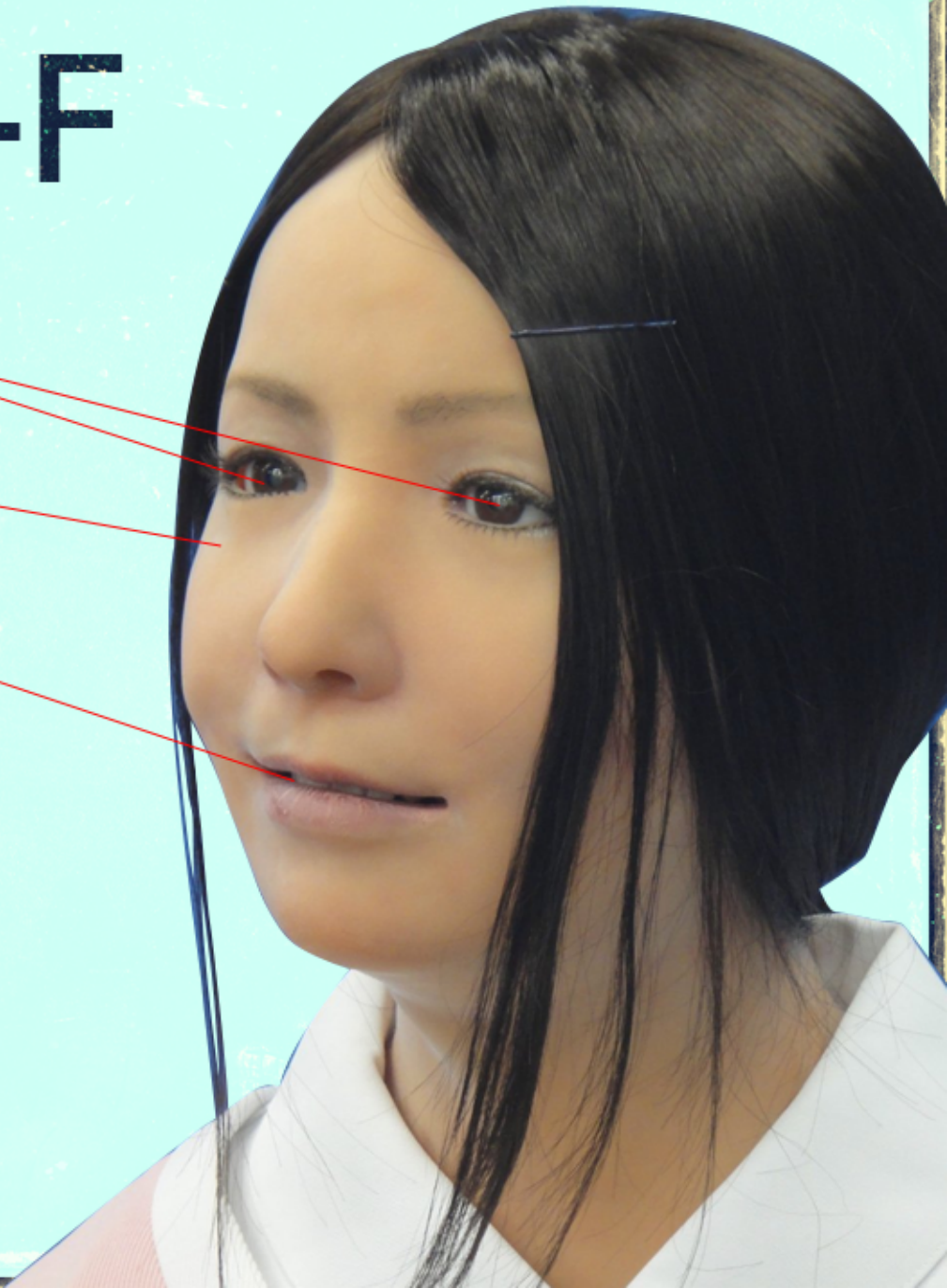


ACTROID-F

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

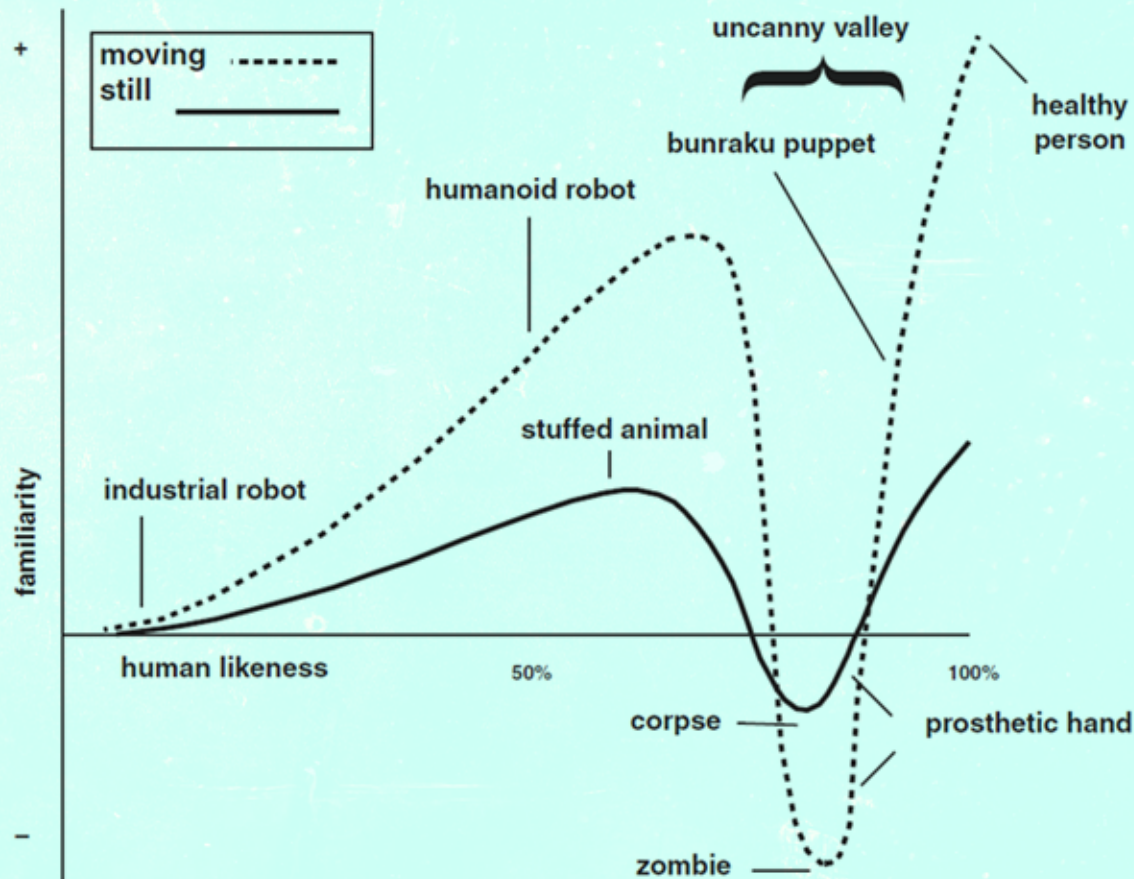
UNCANNY VALLEY

A hypothesis put forward by Japanese
Robotist **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.

UNCANNY VALLEY



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.

