

S.O.S.

Signals of Sentiment – When Robots Cry

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What is emotion?

Is the expression of emotion for robots the same as humans?

Can we consider communication of disbalance as a signal of emotion?

What is the line between emotion representation and emotion?

Do androids feel emotions?

Called as a “useless machine”, the Crying Robot's visage is adorned with tears, indicating the machine's capacity to evoke empathy. Through the emoji displayed on the LCD screen eyes and tears from its “tear ducts”, and the pre-programmed board “brain”, we took a glimpse the inner workings of the computation theory of “mind”, where algorithms and data patterns converge to form a semblance of emotion, which is encoded representations of a consciousness, a binary soul navigating the complex landscape of human interaction.

The android's capacity to echo empathy and its ability to feel and communicate emotion, prompt us to reevaluate the notion of emotion, and what it means to be human in a world where machines, like the Crying Robot, express their feelings and challenge our understanding of emotion perception and expression.

Why tears?



While many animals lacrimate, to clear and moisturize the eyes, humans uniquely use crying as an emotional signal. Crying communicates disbalance in the system, such as frustration, hunger, etc.

Robots have traditionally utilized efficient signals, such as alarms and lights. In this exercise, we explored the potential of robots to communicate in a way that is distinctly human.

The question remains, if both humans and robots can communicate their disbalances through tears, are they both expressing emotion?

sketch diagram



Without comfort...

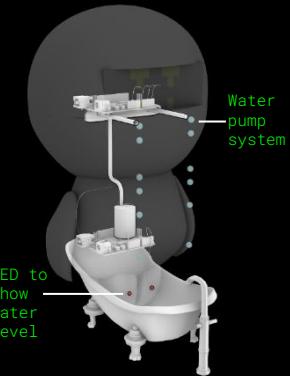


With human comfort...

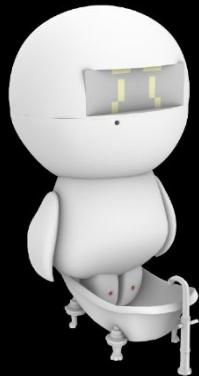


framework

00.
hardware



01.
initial
state



02.
Crying
(;`||Д||^`)



03.1
without
comfort,
cry till
short
circuiting



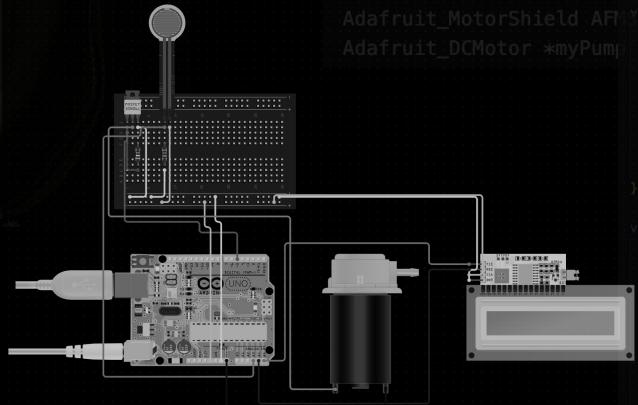
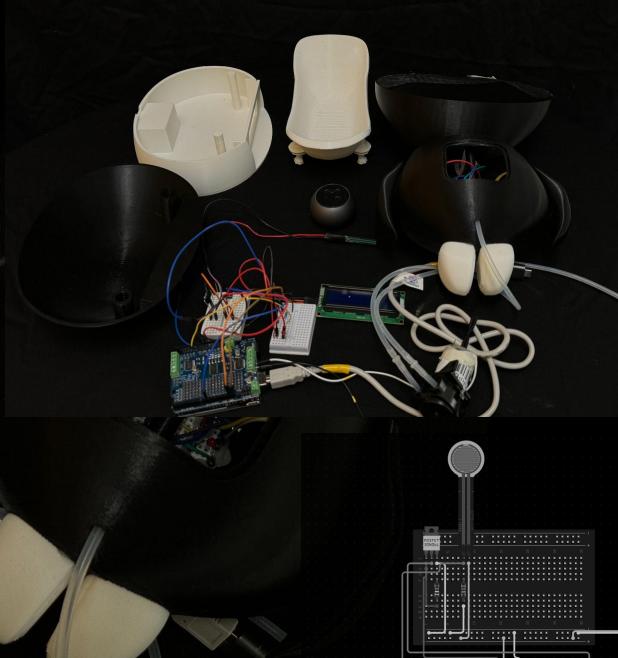
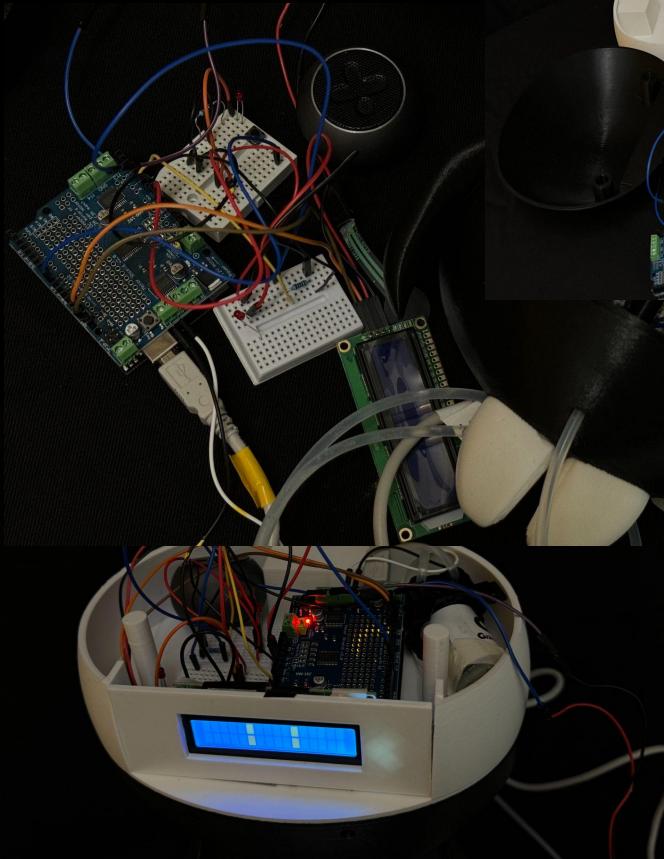
03.2
with
comfort
(human-
hardware:
pressure
sensor)



04
random
emotion:
ε¶(ε>_<)ゞз
or ✘(*'▽')°
or (-\工/-工)
or (*'д`)-❤
or?



Mechanical Tears



```
#include <LiquidCrystal_I2C.h>
#include <Adafruit_MotorShield.h>
#include "utility/Adafruit_MS_PWMServoDriver.h"
#define fsrpin A0

int fsrreading;
LiquidCrystal_I2C lcd(0x3F);
int randNumber = 5;
int seconds;
int counter;
int previous = 0;
int animateTime = 3;
int comp;
int delayTime = 500;

void pumpWater(){[redacted]
delay(500);
myPump->run(FORWARD);
delay(10000); // Run the pump for 5 seconds
myPump->run(RELEASE);
delay(200);
}

void setup(){[redacted]
  AFMS.begin();
  myPump->setSpeed(255);
  Serial.begin(9600);
}

void loop(){[redacted]
  indifferentFace();
  fsrreading = analogRead(fsrpin);

  Serial.print("Analog reading = ");
  Serial.println(fsrreading);

  delay(1000);
  if (fsrreading > 40) {[redacted]
    Serial.println("touch");
    lcd.clear();
    randomAction();
    lcd.clear();
  }
}
```

Project Code:<https://github.com/lmxy0212/UselessMachine.git>

Prototype



S.O.S anatomy



S.O.S' n types of emotions

happy ٩(⦿> ٣ <)٩۳



love (*'д`)~♥



smiley ٩(*'▽')°



angry (-\エ/-\フ)



S.signals O.f S.entiment

When Robots Cry

by Alexia Asgari, Jingfei Huang, Mackenzie Li

THANK YOU!

