

# HATE

## Concept

HATE is a kinetic art installation that serves as a medium to discuss the role of hatred and inflammatory content online, and its negative impact on both the tolerance between humans and their individual mental well-being.

The object resembles an ancient Roman bust made of marble (the 3D printed object was painted white and then coated with a glossy layer to resemble the original material), criticizing people's self concept of righteousness and moral superiority. Some of the paint was removed in some areas to replicate the natural deterioration of the marble over time.

Every time ten new public tweets are published on X containing words expressing hate or disgust, two things happen:

- The "head" (a white balloon with the word "HATE" in capital letters written on it) partially inflates,
- The statue's arm holding a phone with a blade attached to it gets closer to the statue's head.

After a certain amount of tweets, the sharp blade pops the balloon. An OLED screen attached to the bust keeps track of the total number of hateful tweets since the installation started..

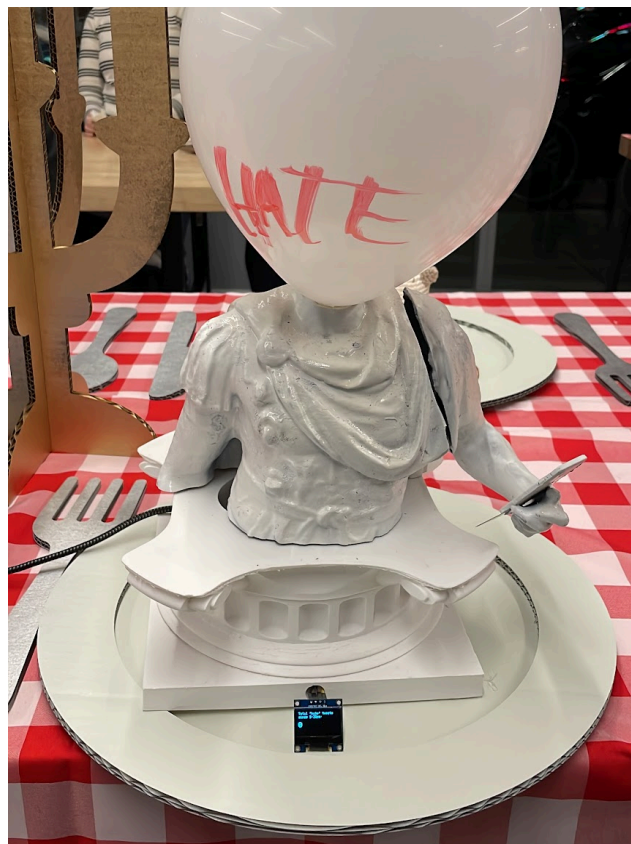


Fig 1. Installation overview

## Pictures

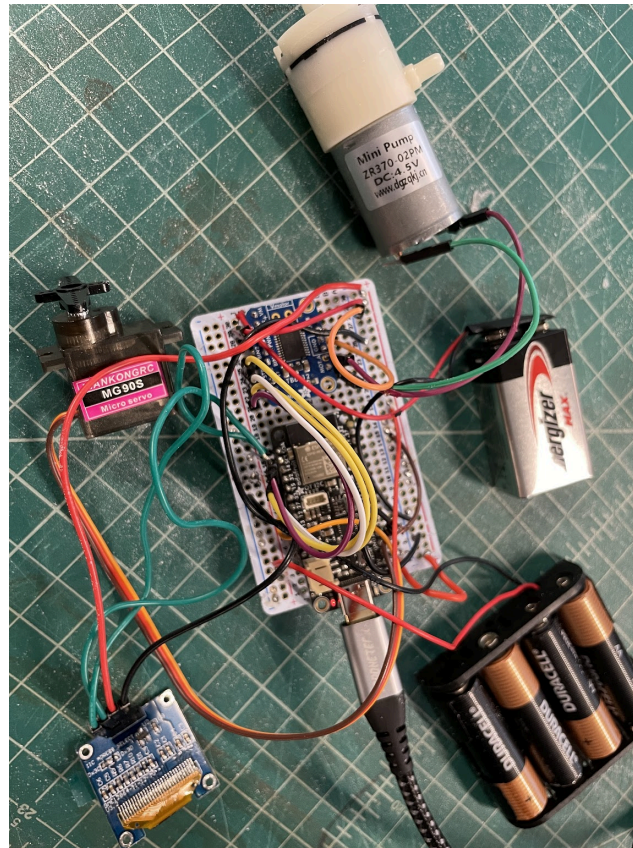


Fig 2. Electronics



Fig 3. OLED screen at the bust's base





*Fig 4. Close-up of bust*



*Fig 4. Close-up of arm holding phone and blade*



Fig 5. Close-up of arm and shoulder, with angled cut to obtain desired turning motion, targeting the head

## Screenshots

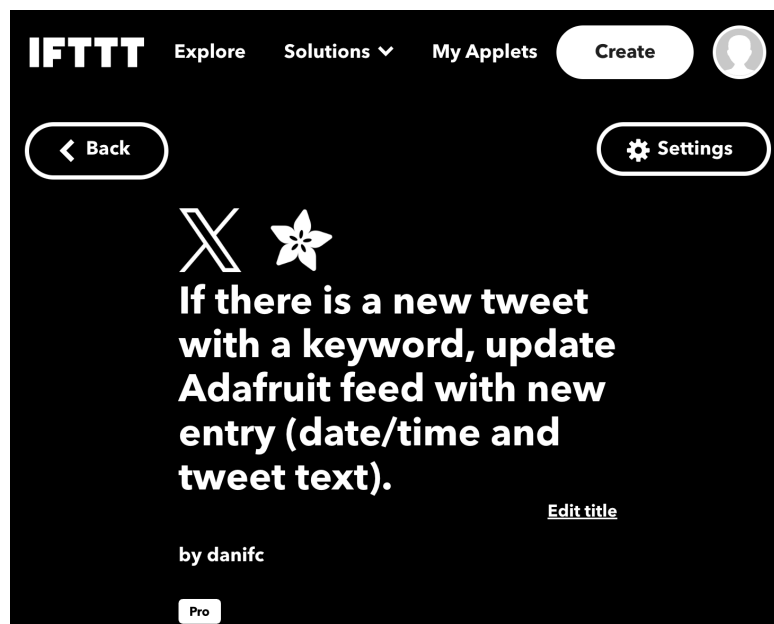


Fig 6. Screenshot of IFTTT: general applet name/description



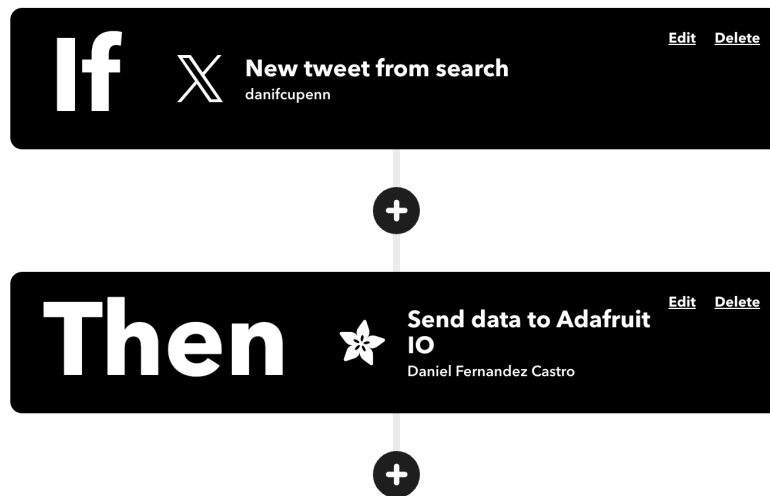


Fig 7. Screenshot of IFTTT: 'If this then that' clauses

The screenshot shows the configuration for the 'If' clause. It features the Twitter logo at the top, followed by the title 'New tweet from search'. Below this, there is a 'Twitter account' section with a dropdown menu showing 'danifcupenn' and an 'Add new account' button. The 'Search for' section contains a text box with the search query: '(hate OR hating OR hatred OR despise OR despising OR disgust OR disgusted OR detest OR detesting)'. At the bottom, there is a note: 'Use Twitter's [search operators](#) for advanced search. Protected tweets will not be returned by this trigger.'

Fig 8. Screenshot of IFTTT: Details of "If" clause

The screenshot shows the IFTTT 'Then' clause configuration for Adafruit IO. At the top is the Adafruit logo (a white flower on a black background). Below it, the text 'Send data to Adafruit IO' is displayed. The configuration includes three sections: 'Adafruit account' with a dropdown menu showing 'Daniel Fernandez Castro' and an 'Add new account' button; 'Feed name' with a dropdown menu showing 'twitterifttintegration' and a note 'The name of the feed to save data to.'; and 'Data to save' with a text input field containing 'CreatedAt ; Text' and an 'Add ingredient' button. A note at the bottom states 'The data to be saved to your feed.'

Fig 9. Screenshot of IFTTT: Details of "Then" clause

The screenshot shows the Adafruit IO feed page for the user 'dfercastro' and feed 'twitterifttintegration'. The browser address bar shows 'io.adafruit.com/dfercastro/feeds/twitterifttintegration'. The page has a dark theme. At the top, there are buttons for '+ Add Data' and 'Download All'. Below these are navigation buttons '< Prev' and 'First'. The main content is a list of data entries. Each entry shows a timestamp, a 'View' link, and a red 'X' icon. A modal window is open over the first entry, showing the timestamp '2023/12/08 01:52:44AM', the ID '0FFB9002XPH01T1DDAYSQDJ9B', and the value 'December 08, 2023 at 01:52AM ; RT @AsraNomani: Dear @RepStefanik: Thank you for your...'. The modal has a close button 'X' in the top right corner.

Fig 10. Screenshot of Adafruit IO feed with sample entry view

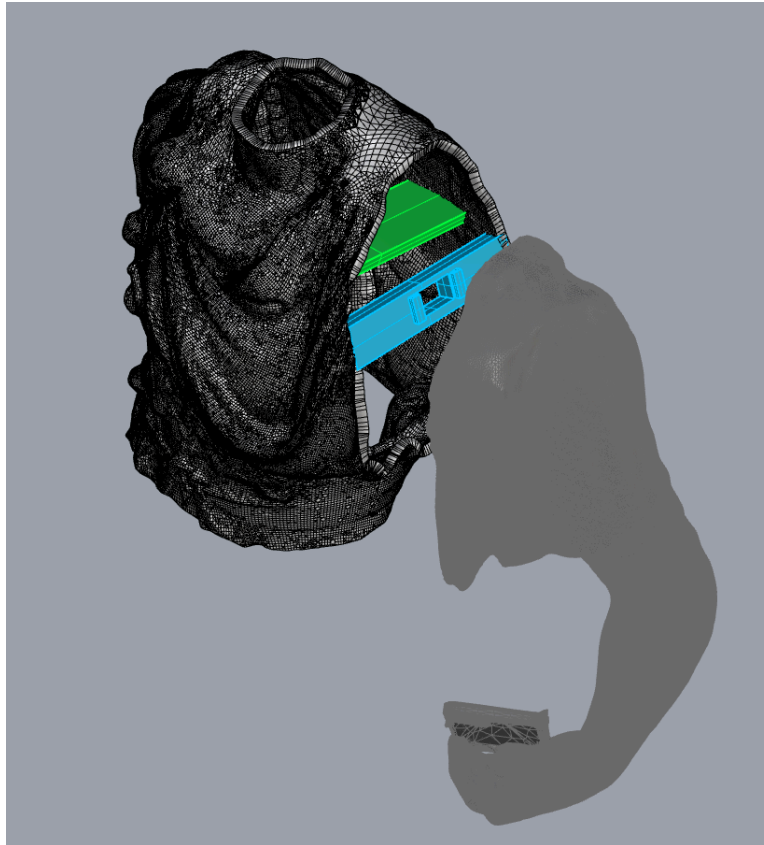


Fig 11: Details of 3D models and mechanical parts

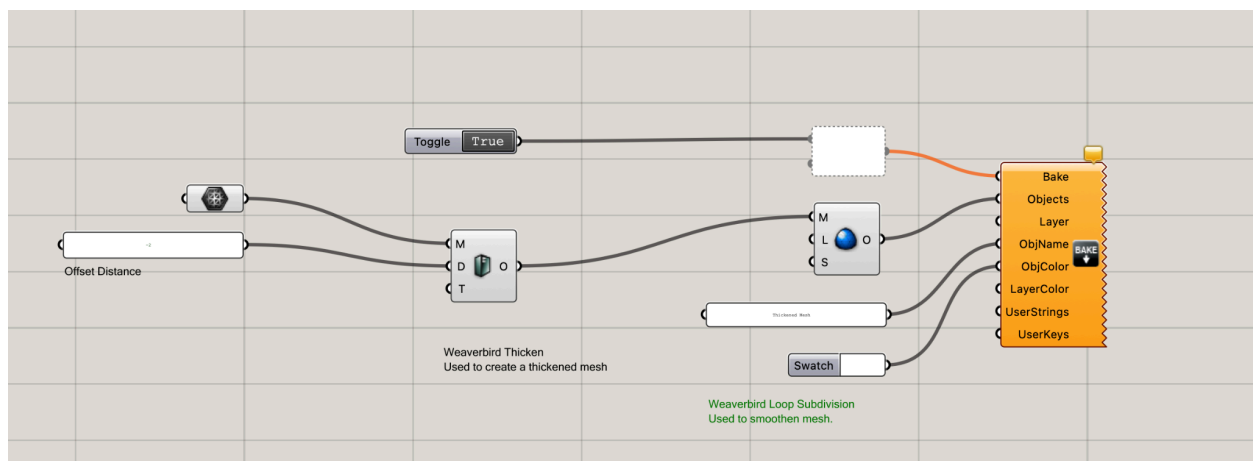


Fig 12: Details of grasshopper code for thickening the mesh

## Hardware, Software and Skill Requirements

### a. Hardware

#### i. Electronics

1. [Electronic Air Pump](#) for pumping the air into the balloon

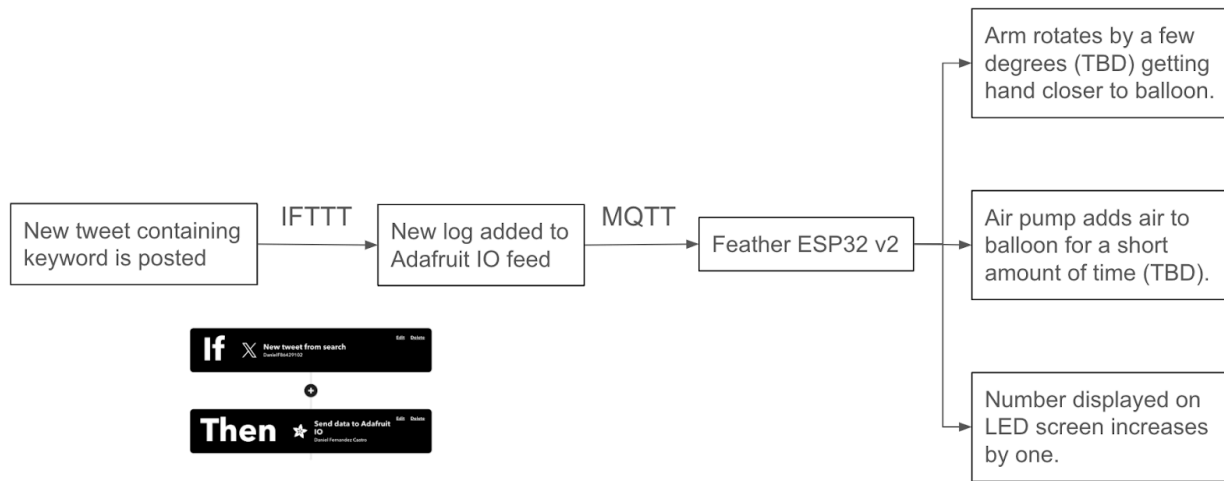


2. [Silicone Tubing for Air Pumps and Valves](#) for connecting the pump to the balloon
  3. [6V Air Valve with 2-pin JST XH Connector](#)
  4. [Adafruit Feather ESP32v2](#)
  5. [Large Lithium ION Battery](#)
  6. Jumper Wires
  7. Soldering wire (tin-lead)
  8. [Perma-Proto Board](#)
  9. LCD display for counting the hatred tweets
  10. Positional servo to move bust's arm
- ii. Consumables or other materials
    1. ABS for 3D printed bust, arm and phone
    2. [White Balloons](#) for the statue's "head"
    3. Foam for absorbing the pump's vibration
    4. Spray paint (white)
    5. Glue for assembly (base to bust, foam inside bust)
    6. Two small screws (to screw board to foam floor in bust)
    7. Sharp blade
- b. Software:
    - i. IFTTT
    - ii. Adafruit IO

## 2. Fabrication Plan

- a. Roles
  - i. Dani: Coding and electronics
  - ii. Miyu: CADing and Assembly
  - iii. Miranda: CADing and Assembly

### 3. Code Flow Chart



### 4. Revised Assembly Drawing

#### Initial Sketch for Assembly

