Allergy Spy Nose

NASAL ALLERGEN DETECTOR

S.J ESTHER WU

Animation Source: https://www.wearepercolate.com/

Background

Inspired by the concept of an **electronic nose** applied to environmental monitoring, this project originates from my own experiences with severe **nasal allergies**.

Living in a city with **high pollen and dust levels** has made managing my allergies a daily challenge, driving my need to constantly monitor the **air quality** and **humidity** in my home to reduce allergy triggers.

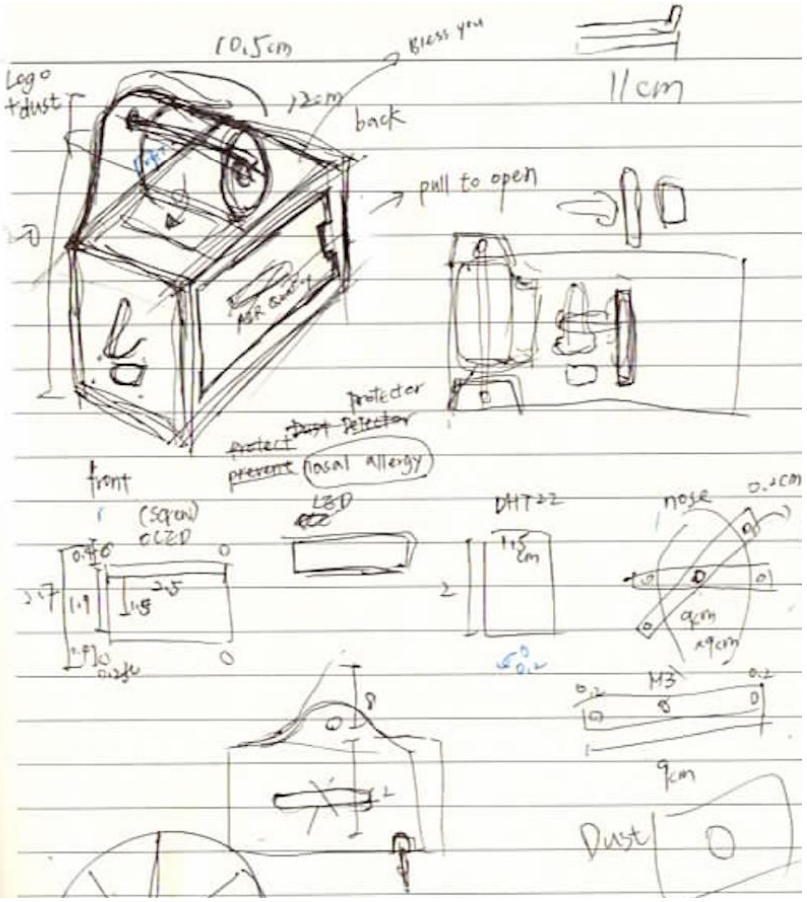
Crafting a Nose-Friendly Haven!

A device that can ***detect common airborne allergens***, ***humidity***, and ***alert user to take preventive actions***, such as cleaning or ventilating the area. This will help in maintaining an allergen-free environment at home.

Allergy Spy Nose

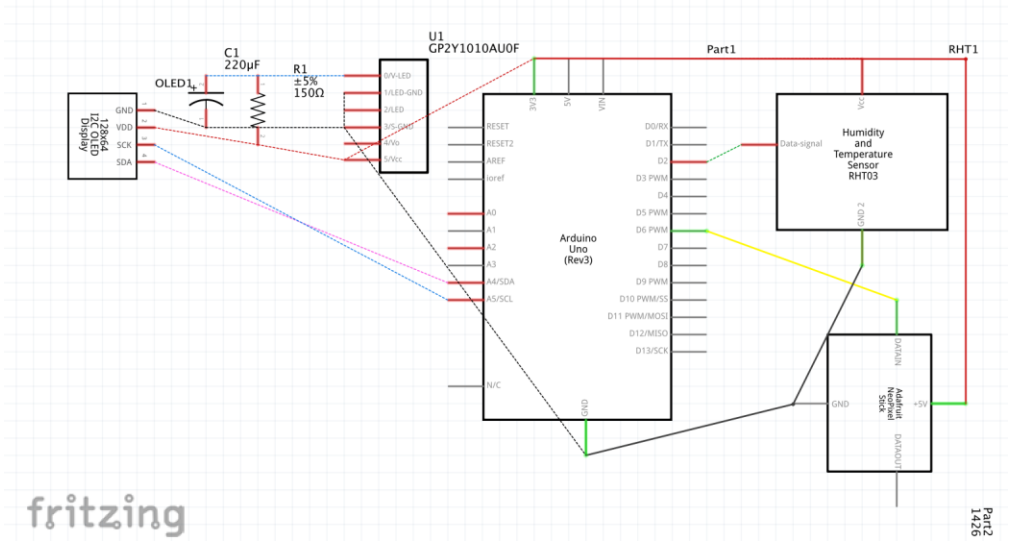
= TISSUE STAND
+ NASAL ALLERGEN DETECTOR

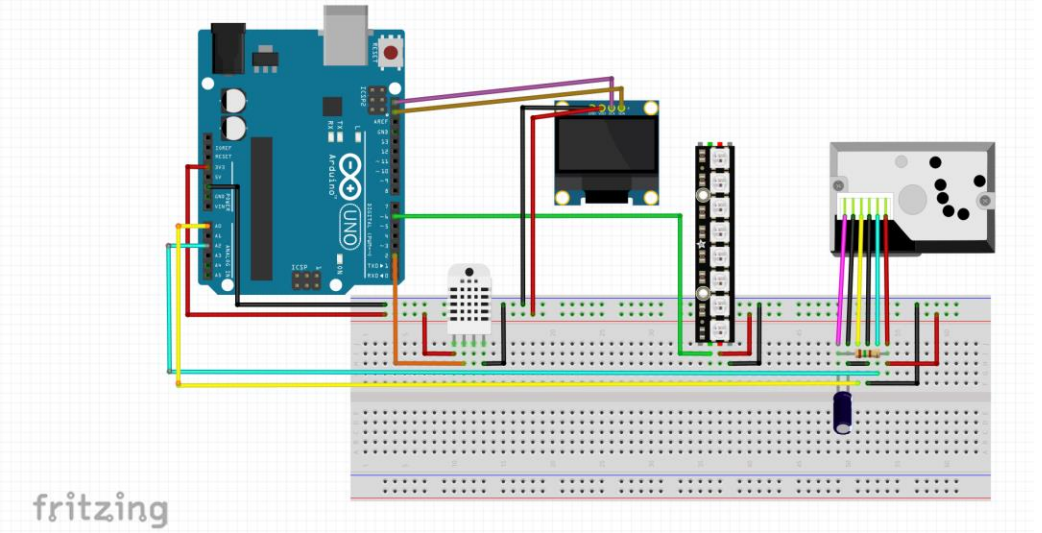
HAY FEVER HEADSET
KENJI KAWAKAMI



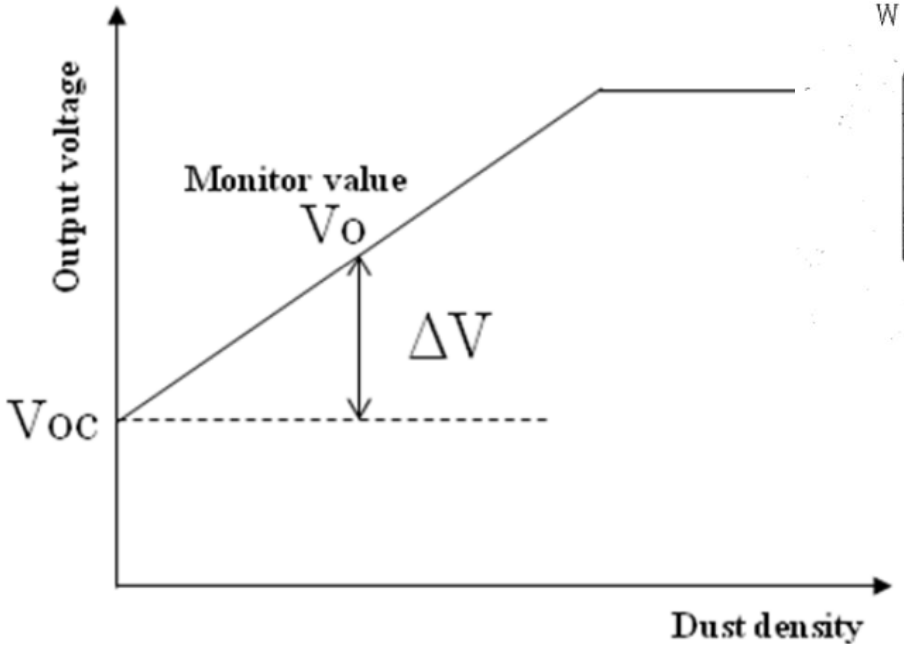
Circuit Diagram & Materials

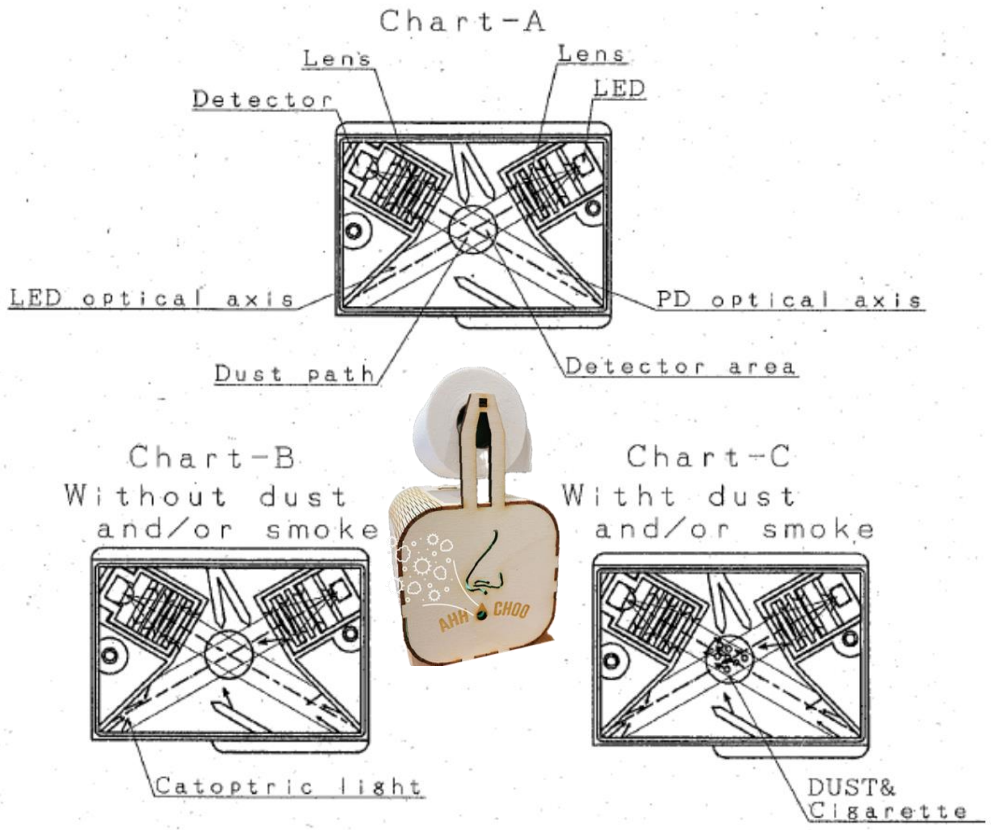
Microcontroller Board: Arduino Uno
Sensors: Dust Sensor GP2Y1010AU0F, DHT22
Actuators: NeoPixel LED
Passive Components: Resistors, Capacitor
Display: OLED Display





Dust Sensor
(GP2Y1010AU0F)





ΔV = Vo – Voc

Sensor output voltage: Vo
No dust output voltage: Voc
Dust density: ΔV

Source: Application note of Sharp dust sensor GP2Y1010AU0F

How does it work?

Data Input: Sensor

Dust

Environment Humidity

Data Output: Feedback

Air Quality Dust density (ug/m3)

<160 160~320 >320

Humidity > 50%
LED turns Orange

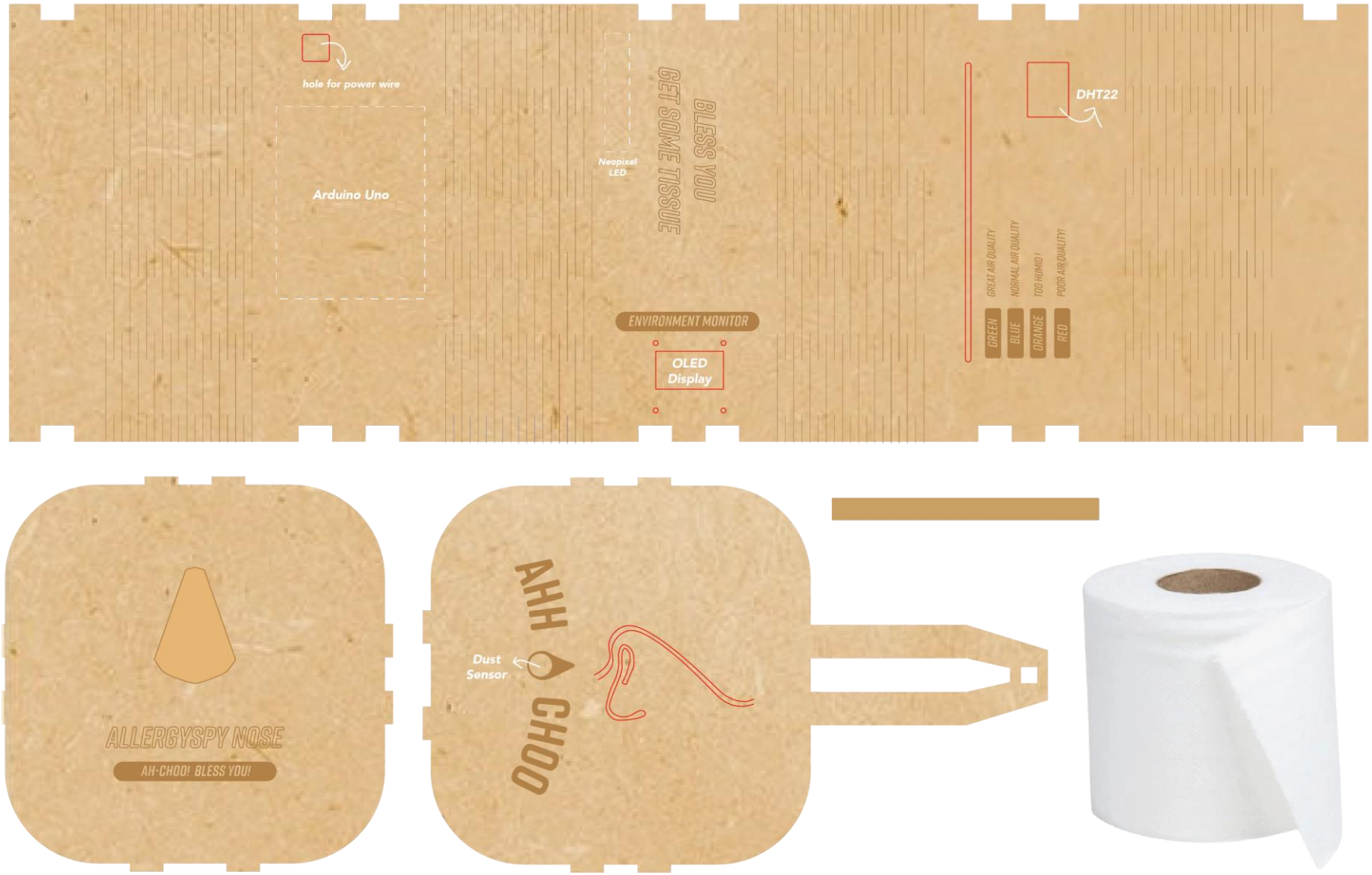
Enclosure

DISPLAY

Enclosure

BEST FOR IN-DOOR

DAILY OBJECT



Future development

Wi-Fi
Publish

Home Hub
(MQTT)

Wi-Fi
Subscribe

Auto-controlled by data

Air purifier

Robot
vacuum

Dehumidifier

Bless you!

ALLERGY SPY NOSE

CRAFTING A NOSE-FRIENDLY HAVEN!

GITHUB