

Electronics

Raspberry PI

- Wireless networking
- Google Cloud API Client
- Trash classifier
- BLE master

Pi Camera

CSI

Button

GPIO



BLE

NRF52832+Buckler

- BLE Slave
- Gyroscope
- Trash actuator

Kobuki Robot

UART

CMUPixyCam

SPI

Ultrasonic
Proximity

GPIO

Software

Python

Capture raw
picture

Send rotation
cmd via BLE

Classify trash
(Google Cloud)

Embedded C

Rotation Control
via BLE

Rotate FSM

PixyCam driver
(recv line info)

Path Finding
FSM

Ultrasonic
(fullbin) signal

PID controller
robot driver