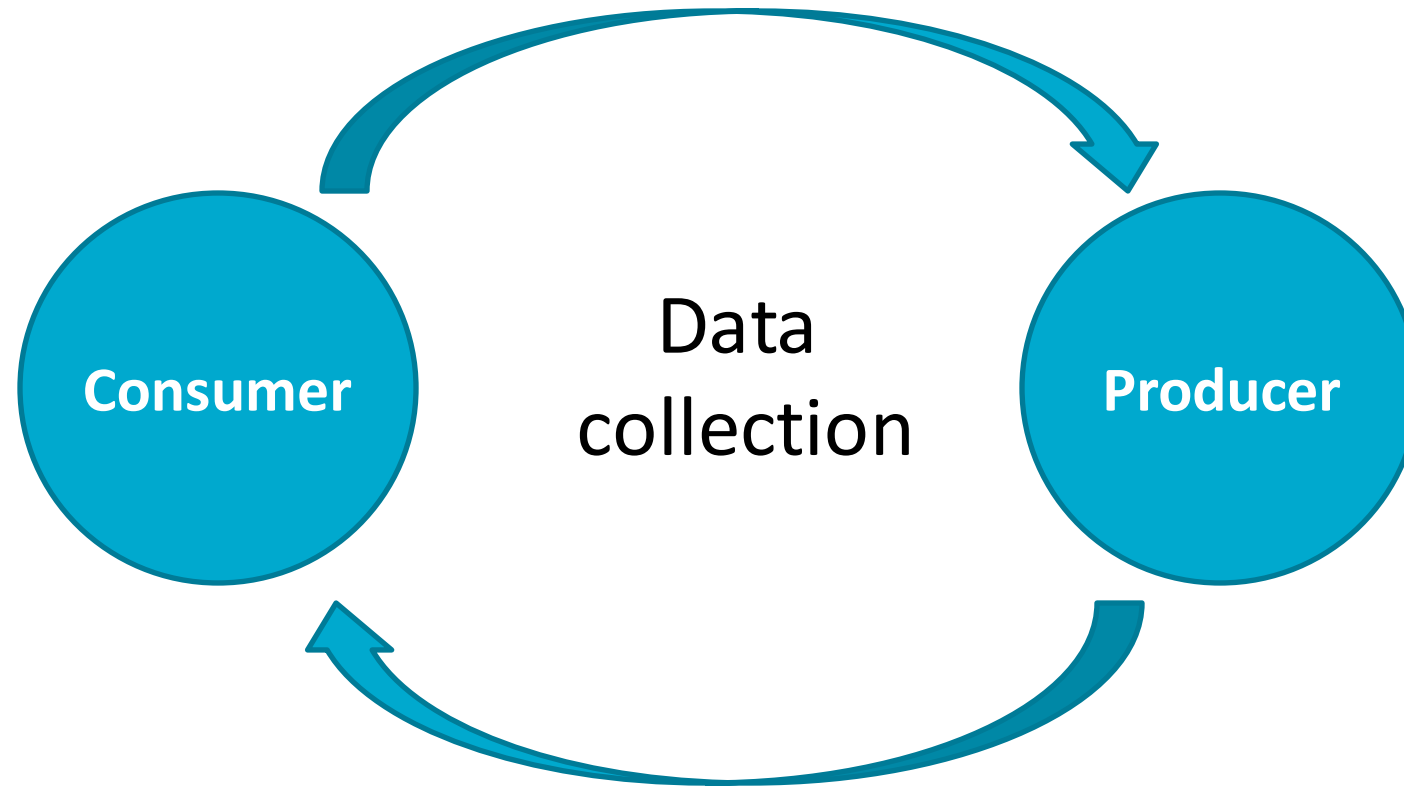# Smart Bin: Engaging the Consumer and the Producer
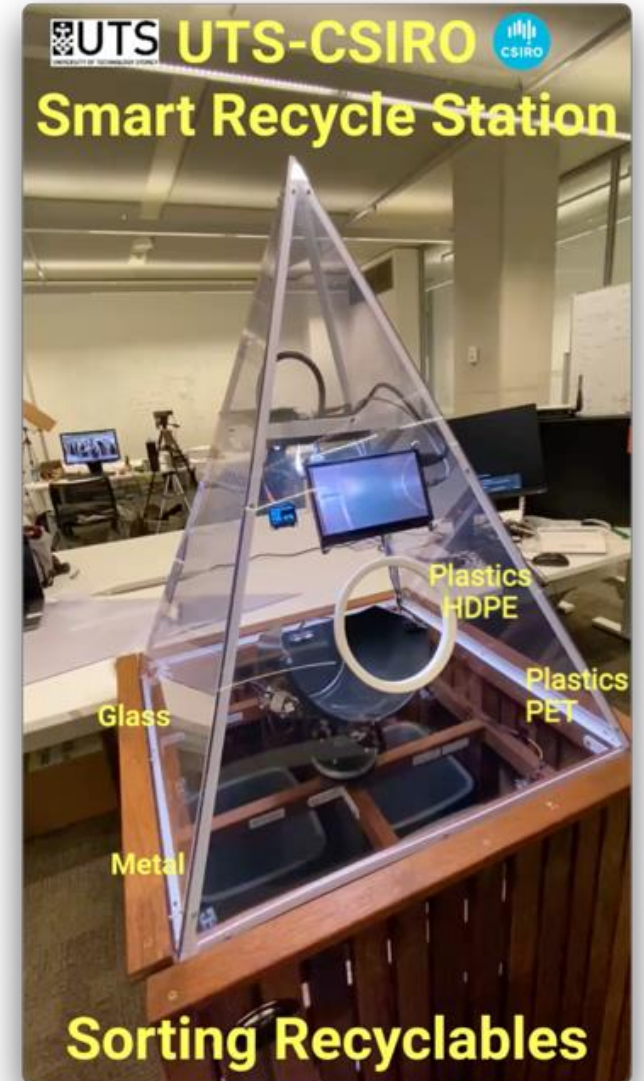
Wei Ni (CSIRO)| wei.ni@csiro.au

Feedback Loop for Circular Economy

Smart Bin and Data Management Platform

- On-spot sorting of Metal, Glass, and Plastic bottles

- Plastic bottles are further classified into PET, HDPE

Smart Bin

- System Integration
  - ➤ Motion control, metal and weight detector
  - ➤ AI/CV-based plastic classification
- On-spot sorting
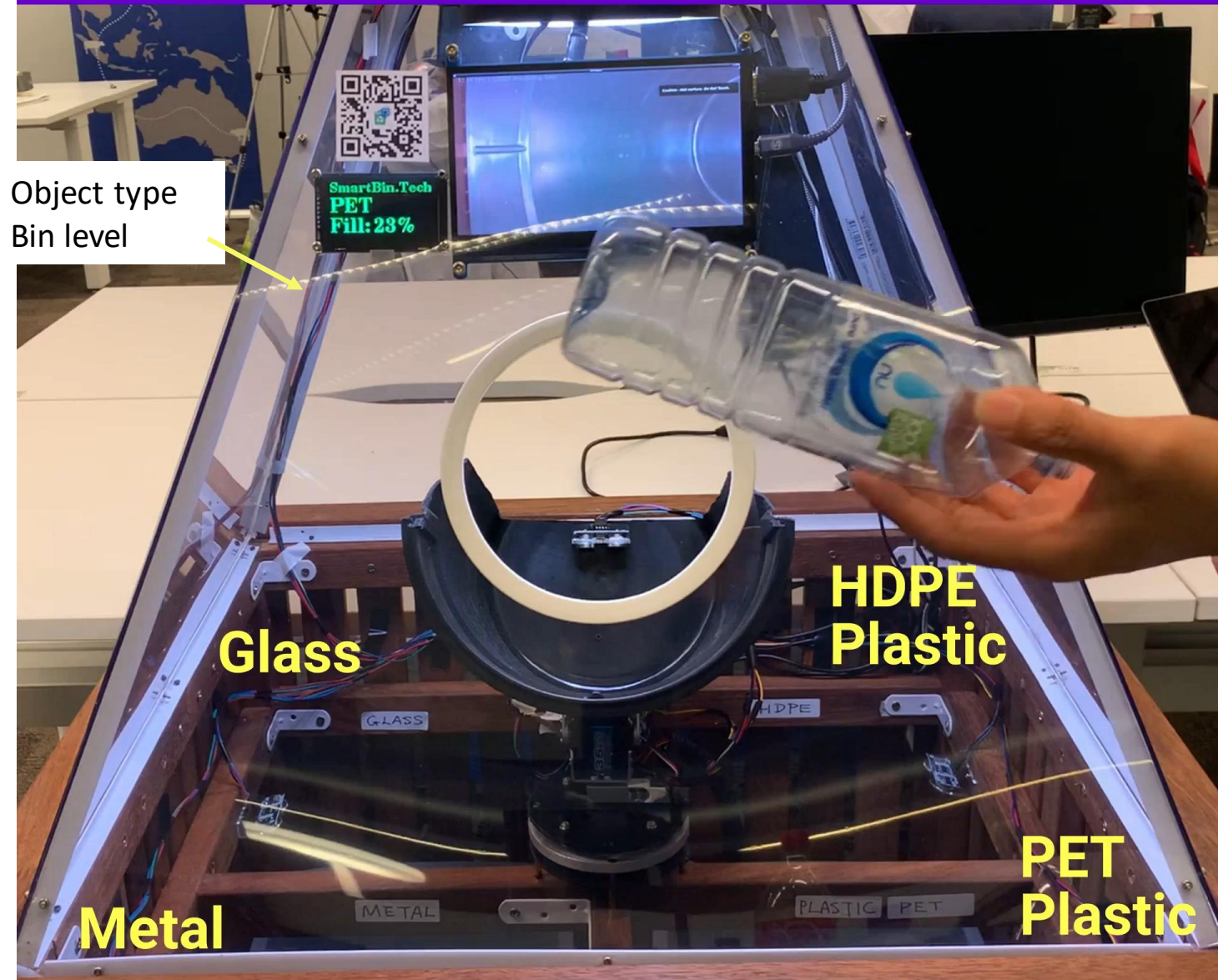 - ➤ Metal, glass, PET and HDPE
- Smart Bin Platform

  https://smartbin.tech/

Plastic Classification with AI

- ✓ Classify PET and HDPE plastics
- ✓ Classify plastics with/without labels
- ✓ Classify bottles beyond the training set
- ✓ Real-time classification on Jetson Nano (FPS>10, 720p video output, 3GB memory usage)
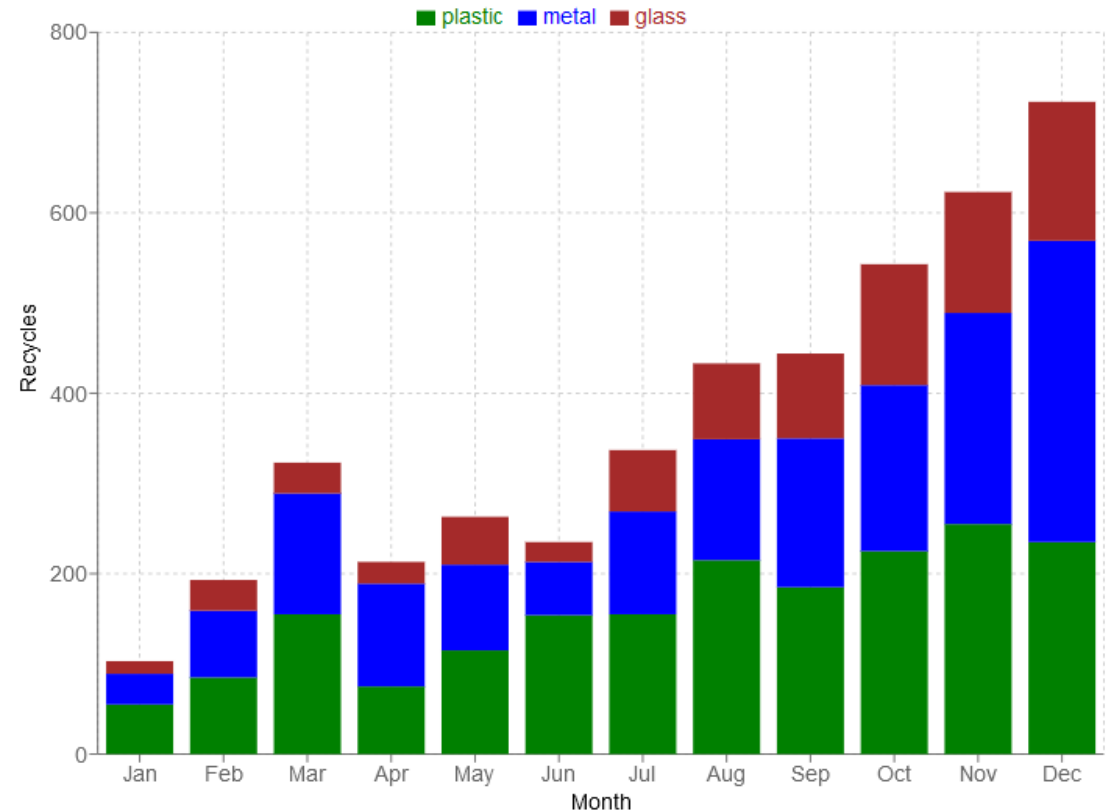
Data Platform and Website

https://smartbin.tech/

Data Platform and Website

https://smartbin.tech/

Thank you

Plastic Classification with AI

Nvidia Jetson Nano

AUD $150

5W – 10W

CPU: Quad-core A57

GPU: 128-core NVIDIA Maxwell

Memory: 4GB memory

Raspberry Pi Camera Board v2

8-megapixel

Yolo V5 Object Detection Algorithm

Structure: CSPDarknet + PANet + Yolo Layer

Plastic Classification with AI