Boundary recognition for irregular shaped object using AI

Features

Accurately recognize boundaries of irregular shaped objects (Recognition accuracy up to 96%).

Highly efficient AI processing significantly reduces training time (to approximately 10 minutes).

AI accurately recognizes boundaries of each object with just a few of training data.

Only a few of “training data” are needed

Training data
(gives the ground truth about area of each object)

Preparing training data

AI learning is done based on height information of each area associated with ground truth and highly efficient AI processing helps to quickly segment the area of each object, with higher accuracy.

Compared to the prior methods, it is possible to correctly segment the area of each irregular shaped object and improve the success rate of grasping.

Recognition result of proposed method (image)

Recognition results of prior method (image)

Flow of boundary recognition for irregular shaped objects using AI

Concept
Boundary recognition for irregular shaped object using AI

Features

Capable of recognizing boundaries of various foods with irregular shapes.

Boundary recognition (based on height), with priority given to objects that are easy to pick.

Stable boundary recognition to pick all objects even when the number of objects in the bin is changed.

Example (real photograph)

Example of results ① (many objects in the bin)
Boundary recognition with priority given to objects that are easy to pick.

Example of results ② (a few objects in the bin)
Stable boundary recognition even when the number of objects in the bin is changed.