

# **Pop'n Food: 3D Food Model Estimation System from a Single Image**

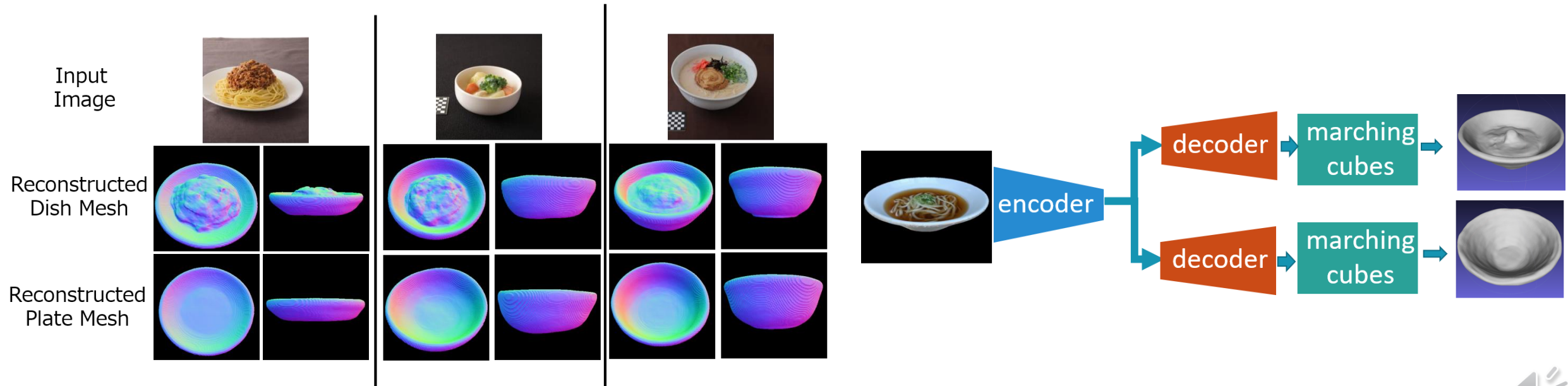
**Shu Naritomi, Keiji Yanai**

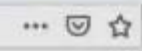
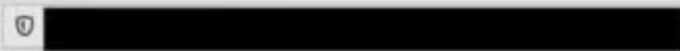
**The University of Electro-Communications**



# Introduction

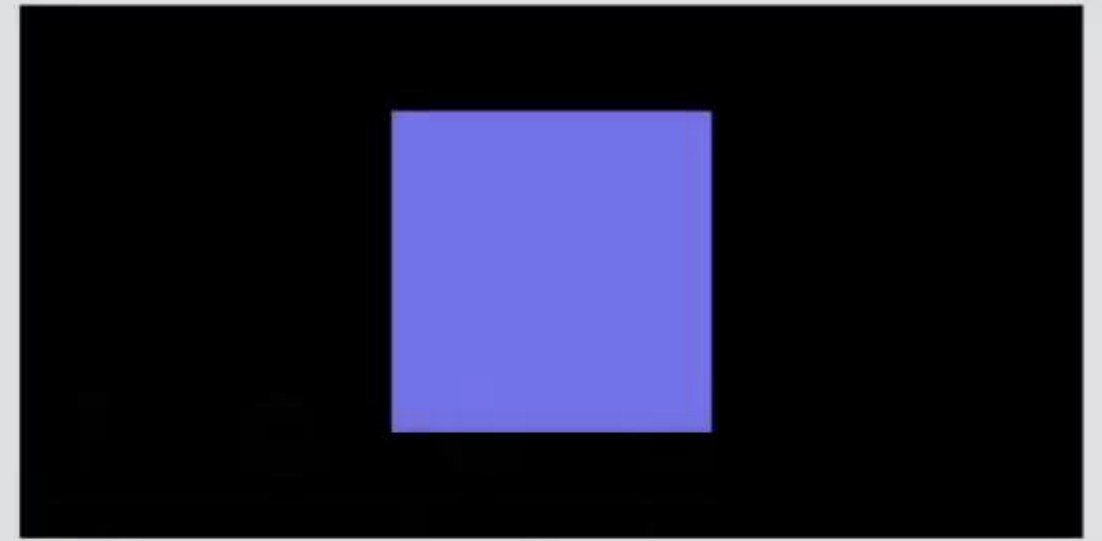
- Our recently study, Hungry Networks[1]
  - 3D Mesh reconstruction from single image.
  - A large number of 3D models are generated.



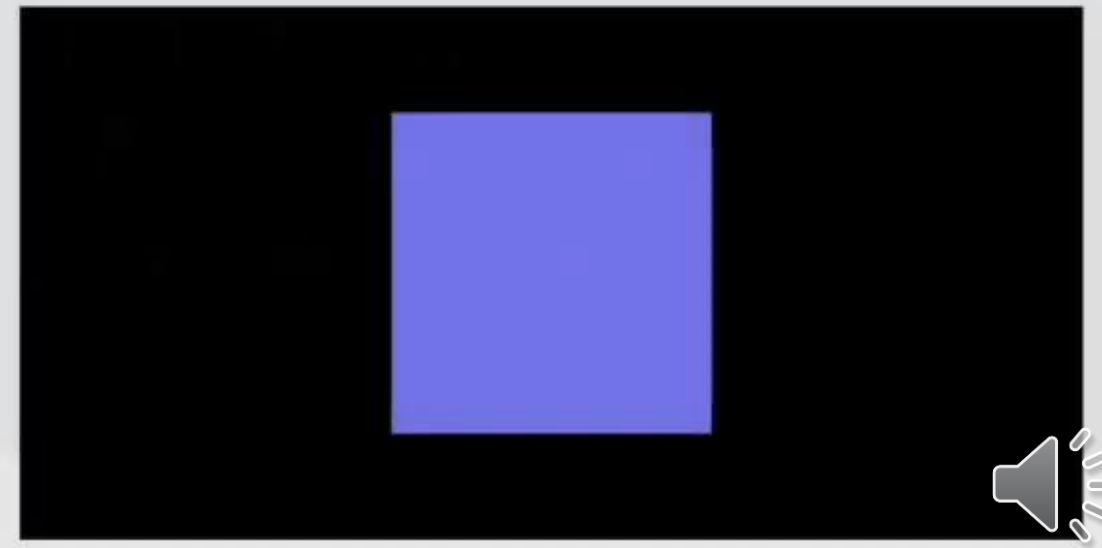


Select Image

Dish

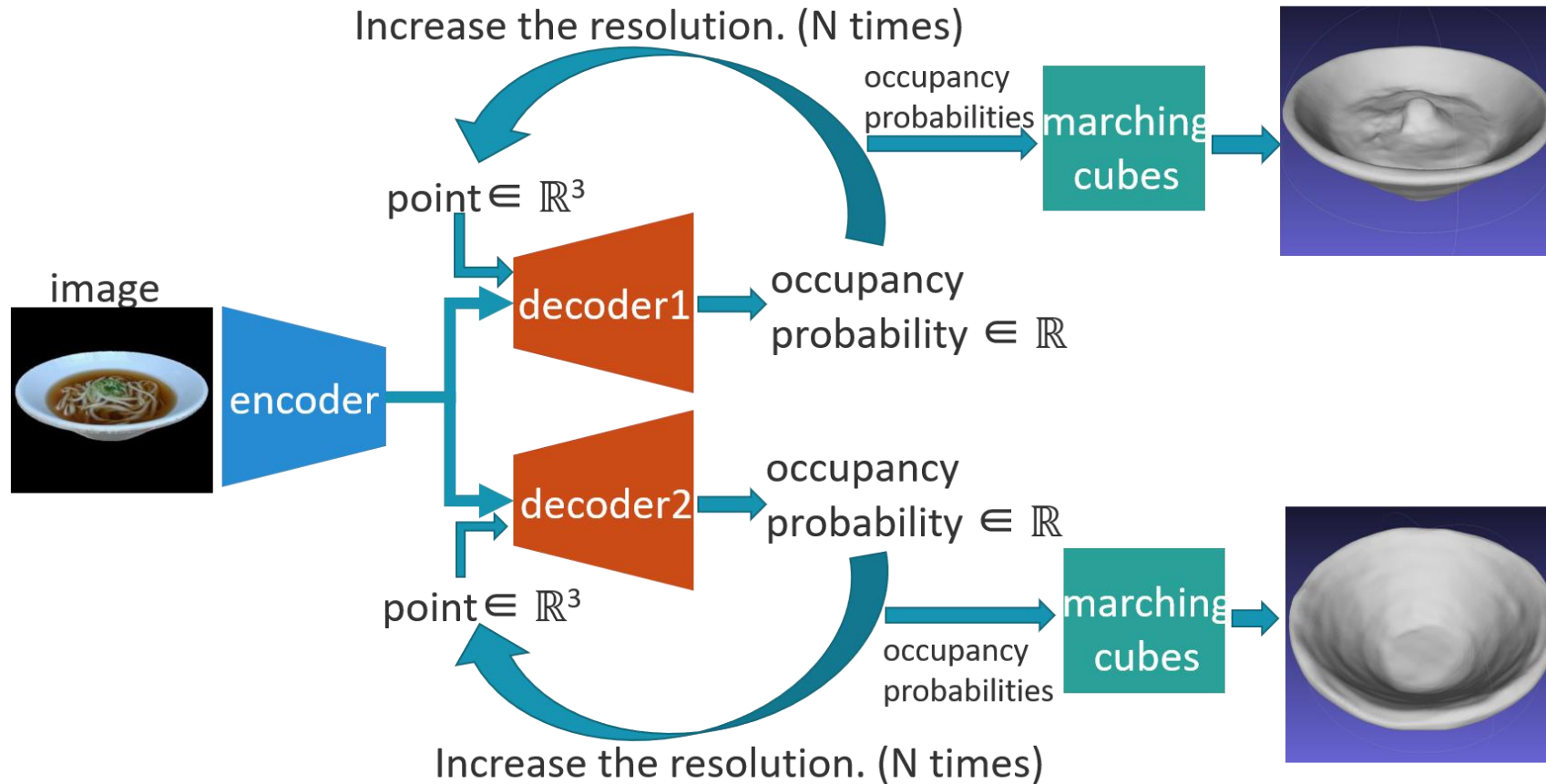


Plate

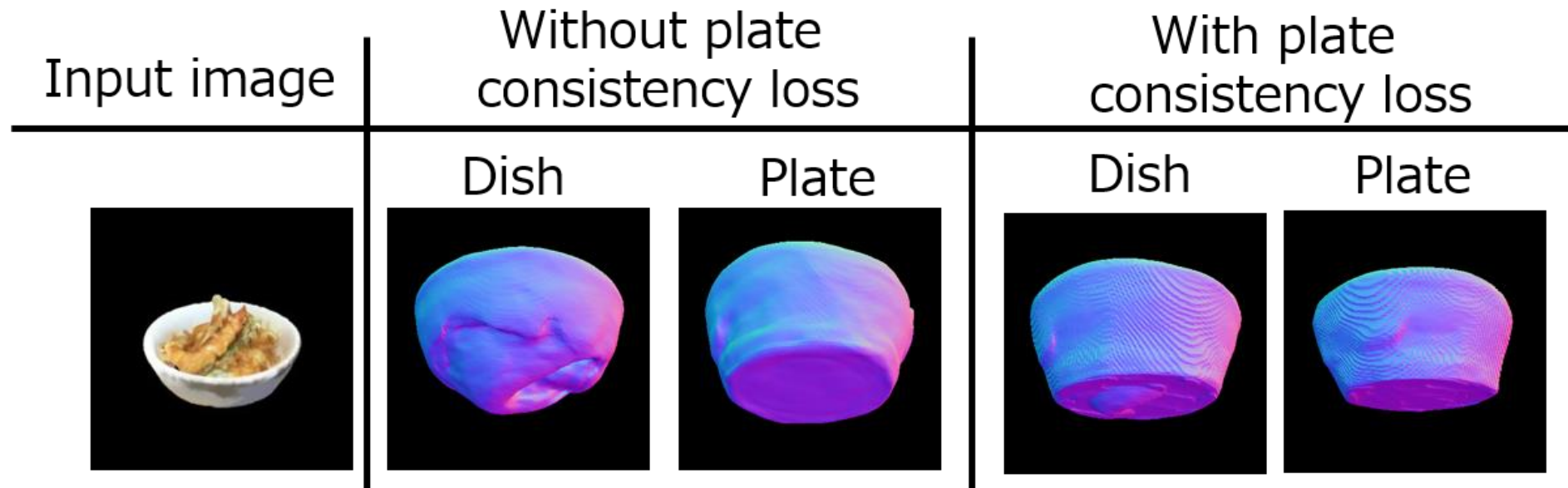


# Hungry Networks

- Reconstruct 3D dish (food + plate) volume and 3D plate volume from a single dish image.



- Achieve consistency between the plate part of the two reconstructed volumes introducing **plate consistency loss**.



# Hungry Networks

- There is no dataset containing a 3D mesh of dish.
  - Build a new dataset
- 240 Dish 3D models, 38 plate 3D models.
  - Using a commercially available 3D scanner.



- Pop'n Food
  - Reconstruct **two 3D models** of a dish and a plate from **a single dish image** using Hungry Networks.
  - reconstruct the 3D model in **real-time** and view it interactively.
    - **Not Video**
    - **WebGL** is being utilized.
  - useful for qualitative evaluation and so on.

