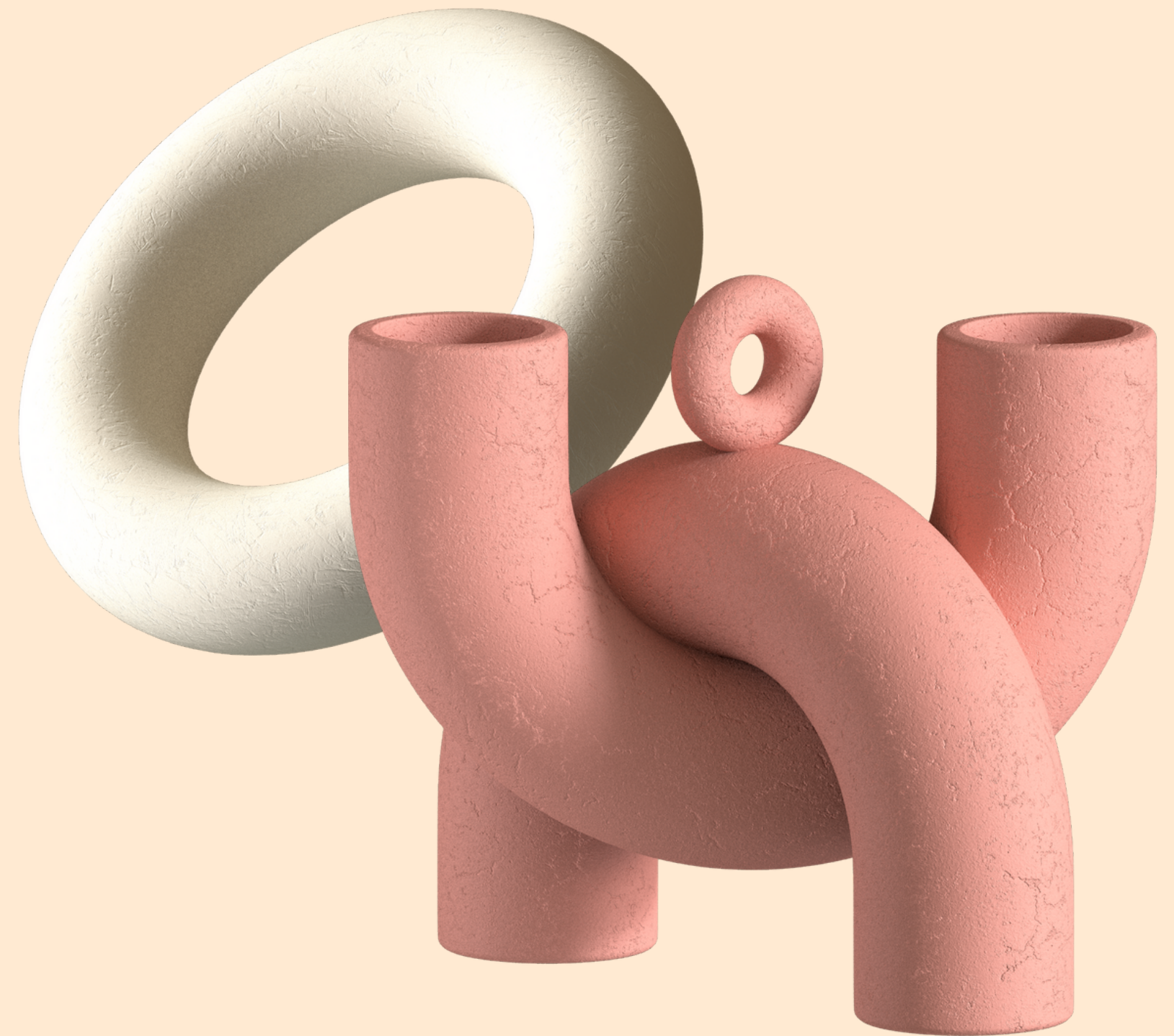# Insect Counting using Density Map Based Estimation

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Problem & Purpose Statement

- Counting insects manually in the field to identify the damage of plant is a difficult task for agriculture experts.
- To resolve this issue, people worked on automatization and digitalization techniques where the authors proposed density-map based estimation approach in comparison with existing candidate selection and classification technique for counting white flies on eggplant.

Solutions

Approach 1 – Candidate Selection & Classification

LEAF
SEGMENTATION

CANDIDATE
SELECTION

CANDIDATE
CLASSIFICATION

Drawbacks

Extraction of the
candidates is weak

Inaccurate & insufficient
feature extraction

Add false positives
(shines, sparkles,
damages) as candidates

Approach 2 – Candidate Selection & Classification

LEAF
SEGMENTATION

DEEP LEARNING
BASED SOLUTION

DENSITY MAP OF
ALIVE INSECTS

Improvements that can be done:

To validate the performance
of the model in leaves with
different infestation degrees

Efficiency of the model
can be improved.

Development of models
achieving similar performance
with a reduced number of
training images

Thank you!