Using Synthetic Images to Detect Products on Shelves

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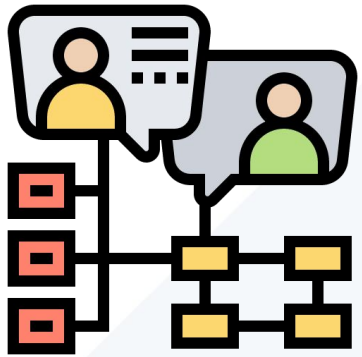
Introduction

Why object detection for groceries shelves?

- Monitoring points of sale by brands moving from manual data collection to strategic management of the shelf.
- Greater attention is given to the assortment, compliance with promotions, second exhibitions and more.
- The information to be collected is more and more analytical.
- Data collection operations are expensive, time-intensive, error-prone, requiring staff to visually inspect the shelves of the sales floor, check the display situation, the availability of products, their positioning, promotions and verify contractual agreements with suppliers.



How to make this process more effective?

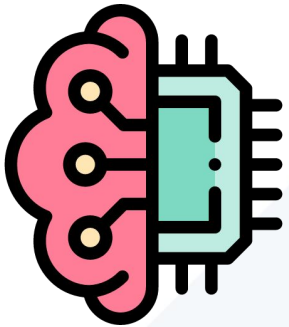
Introduction

Automate the process with AI

Neural networks achieve great accuracy in object detections with real-time response. An AI-based system could allow the Key Accounts to operate in a precise and fast manner.

An application could, for example:

- Check the product placement .
- Detect misplaced items.
- Extract useful information for the store management.
- Collect price tag information
- And more



Introduction

Training a neural network requires data

Neural networks require lots of data to be trained accurately.

Publicly available datasets present different problems, such as being too generic (every object belongs to the same class) or region-specific.

Can we build or own?

SKU-110k

Grozi-120

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Facing the lack of labeled data

Collecting and hand-labeling images is a very time consuming task. We can generate our own dataset using a CG approach.

It allows us to generate many images with different configurations and conditions to simulate real-world scenarios.

The labeling of generated images is performed automatically during the generation process.

Synthetic data example

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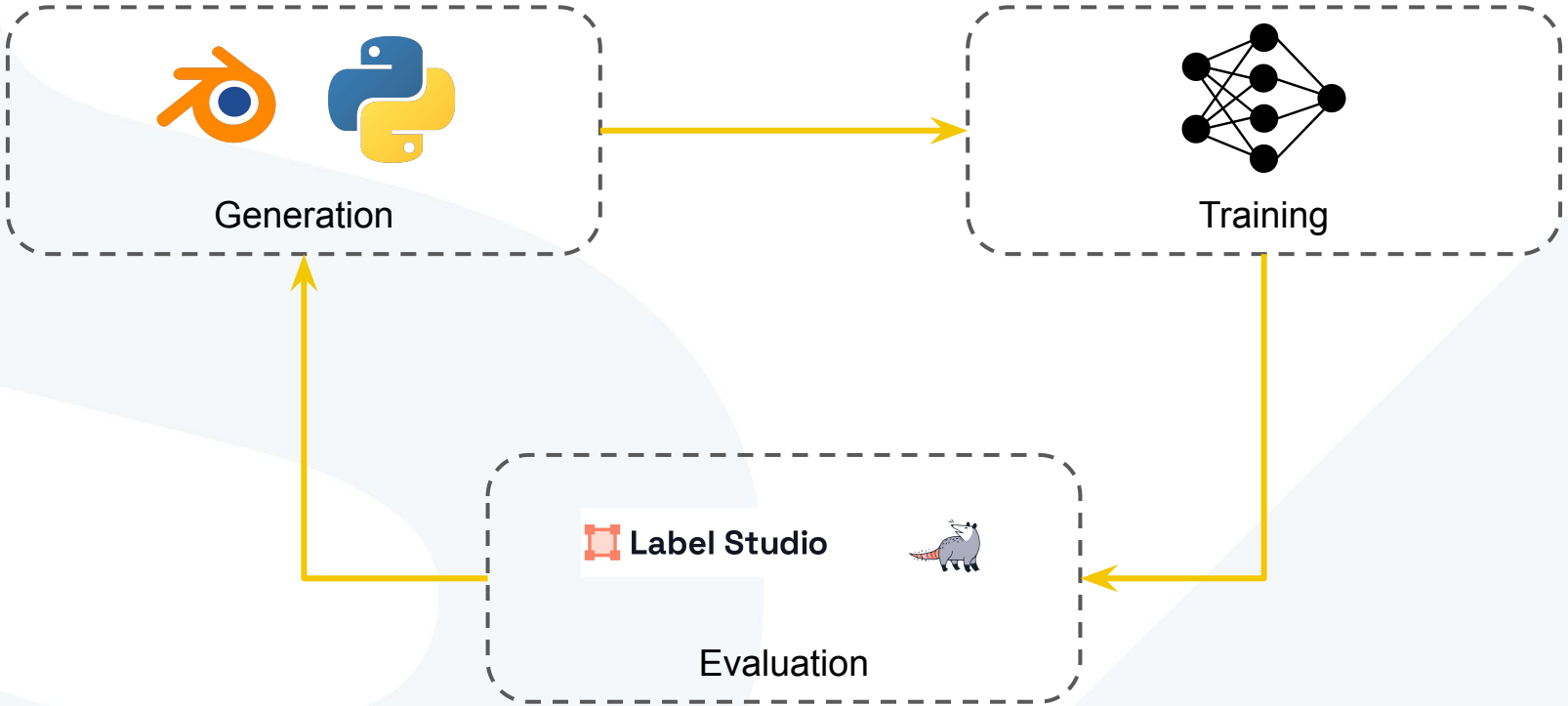
Pipeline



Experimental Results

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Thanks for your attention.

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