ELSA MIGROS

VIDI Suite

APPLICATION NOTE

Appearance-based product identification

CHALLENGES IN LOGISTIC CENTER PRODUCT TRACKING

- Automatic product identification and classification without access to bar or matrix code

- Normal and expected changes in product or batch appearance and environmental variability exist and can cause problems. So systems that are implemented to take on this challenge need to be resilient to the mentioned variations

- Possible visual similitude of different products

- Frequent introduction of new products or packaging

ViDi SUITE

Deep learning based industrial image analysis software for automated inspection and classification

Human-like: Outperforms the best quality inspectors

Self-Learning: No software development required

Powerful: Tackles the impossible to program inspection challenges

HOW DOES IT WORK?

It is as simple as 1-2-3:
1- Provide a reference collection of images labeled in accordance with the different classes
2- Allow ViDi Suite learn to separate different classes based on this collection
3- Proceed with sorting

ViDi Suite offers significant advantages in terms of performance and simplicity for configuring and operating.
It does not rely on a bar code to identify and sort products but does it based on the visual appearance of the products themselves.
Its self-learning statistical engine empowers the logistic center manager to easily teach the system by providing images properly labeled in accordance with the product they show.

(No programming of extensive selection criteria – no development of image processing and filter sequences)
And when a new product has to be added, there is no need to involve a specialist in industrial vision: Just add the images of the new product to your image database and let ViDi Suite figure out by itself which features in the images offer the best separability. The system auto-calibrates and you are ready to go.

VIDi green

Two different milk cartons with the same package design. The only difference is the presence of an additional text (in the red circle). However, there is no need to feed this information to ViDi green. It figures this out by itself and learns to ignore all other changing yet irrelevant aspects such as the expiration date or the relative alignment of the bricks.

The two products are the same in the left and right image (4-pack wrap, same bar code). The difference emerges from the caddie preparation: half caddies (right image) preparation requires additional plastic wrapping (circled in red). ViDi green locks onto this "soft feature" by itself and reliably detects it across images tolerating significant variation in appearance.

INTEGRATION

Due to its self-learning abilities, ViDi Suite can be deployed quickly and easily for new applications without requiring any specific development

RESULTS & PERFORMANCES

Human-like: ViDi green is a bio-inspired tool able to differentiate classes of objects.

Self-Learning: ViDi green does not require any programming. All you need is to provide a sufficient number of images per class for labeling.

Powerful Classification: ViDi green solves a hard to tackle programming challenge; it automatically finds what distinguishes each class (without expert analysis).

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