Recognizing Groceries in situ
Using in vitro Training Data

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Using pictures of objects captured under ideal imaging conditions (in vitro) to recognize objects in natural environments (in situ) is an emerging area of interest in computer vision and pattern recognition. We propose a new multimedia database of 120 grocery products, Grozi-120.

General Problem in Computer Vision

Our Work

APPLICATIONS
- Assistive vision systems for the blind
- Mobile robots navigation-interaction

Database “in situ”

Testing Data

Videos Collected in Store
- 29 Divx 5.2.1 files, 30 fps, 2kbps
- Cluttered background, different products per frame
- Multiple instances of same object per frame, partially occluded
- Rotated, different illumination, angle of view, affine and projective distortion
- Product location saved every 5 frames

Future Work Needed
- Use more precise and elaborate detection/recognition algorithms
- Dynamically increase the dataset
- Use context information about physical object proximity to improve localization

Results - Localization
14 frames per product with highest number of keypoints as True Positives
100 frames with none of the dataset products as True Negatives

Results - Recognition
10 in situ images per product with highest n. of keypoints as Positives.
110 samples of the remaining products as Negatives

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