

## Robust Barcode Detection with Synthetic-to-Real Data Augmentation

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**Abstract :** Barcode processing of captured images is a huge challenge, as different shooting conditions can result in different barcode appearances. This paper proposes a deep learning-based barcode detection using synthetic-to-real data augmentation. We first augment barcodes themselves; we then augment images containing the barcodes to generate a large variety of data that is close to the actual shooting environments. Comparisons with previous works and evaluations with our original data show that this approach achieves state-of-the-art performance in various real images. In addition, the system uses hybrid resolution for barcode “scan” and is applicable to real-time applications.

**Keywords :** barcode detection, data augmentation, deep learning, image-based processing

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