# DavarOCR: A Toolbox for OCR and Multi-Modal Document Understanding

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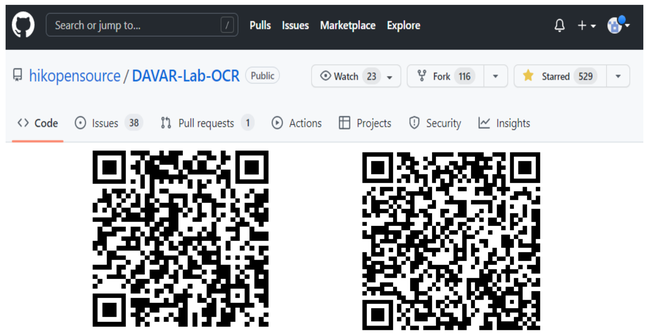
## Introduction

DavarOCR is an open-source toolbox for OCR (Optical Character Recognition) and Document Understanding tasks.

- PyTorch + CUDA
- Apache-2.0 License
- 10 different task forms
- 20+ advanced algorithms
- Detailed Instructions and models
- Compatible with mmdetection & mmcv




**Paper**  **Github**

## Current Support Methods

| Basic OCR Tasks | | | | Document Understanding Tasks | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Text Detection | Text Recognition | End-to-End Text Spotting | Video Text | Layout Analysis | Information Extraction | Named Entity Recognition | Reading Order Detection | Table Recognition | Table Understanding |
| • EAST<br>• Mask-RCNN<br>• Text Perceptron Det | • Attention<br>• CRNN<br>• ACE<br>• SPIN<br>• RF-Learning | • Mask-RCNN<br>• Text Perceptron<br>• MANGO<br>• DLD | • YORO | • VSR | • Chargrid<br>• TRIE | • Bert NER<br>• BiLSTM+CRF | • GCN-PN | • LGPMA | • CTUNet (to be released) |

➢ More algorithm and domain support is on the way: Text Synthesis, Pre-trained Visual & Language Models, Doc VQA, etc.

➢ Welcome to public pull request (bug fixes, new features, new algorithms, etc.)

## Highlight Features

### ➢ Across Tasks Module Sharing

- Modules in mmdetection: BACKBONE, NECK, ROI_EXTRACTOR, HEAD, etc.
- New Modules in davarocr: TRANSFORMATION, EMBEDDING, CONNECT, etc.

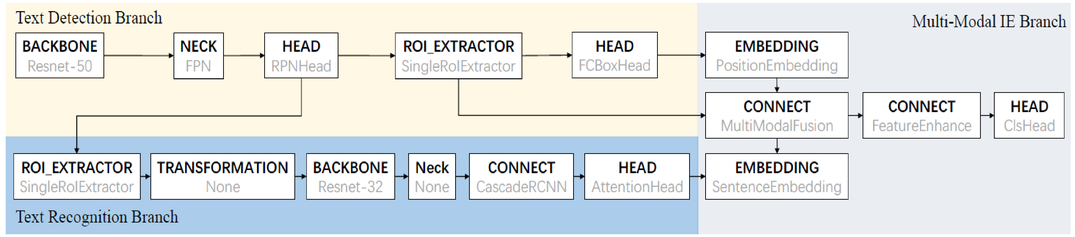



**Figure 1: The modular design for the end-to-end KIE model TRIE.**

### ➢ Uniform Data Label Format

- Unified basic formats for task sharing.
- Support for image/video/plain text.

```
{
  "Images/train/img1.jpg": {          # Relative path of images
    "height": int,                    # Image height
    "width": int,                     # Image width
    "content_ann": {                  # First-level annotations
      "bboxes": List[List[int|float]],          # Bounding box for each obj
      "cbboxes": List[List[List[int|float]]],   # Character-wised bounding boxes
      "cares": List[int],             # Whether the bboxes is ignored
      "labels": List[List[int]],      # Category for each box
      "texts": List[str]              # Transcriptions of text
    },
    "content_ann2":{                  # Second-level annotations
      ...                             # Same format with 1st-level
    }
  },
  ....
}
```

**Figure 2: Illustration of the basic data label**