<Computer vision school: Advanced>

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AI HOUSE

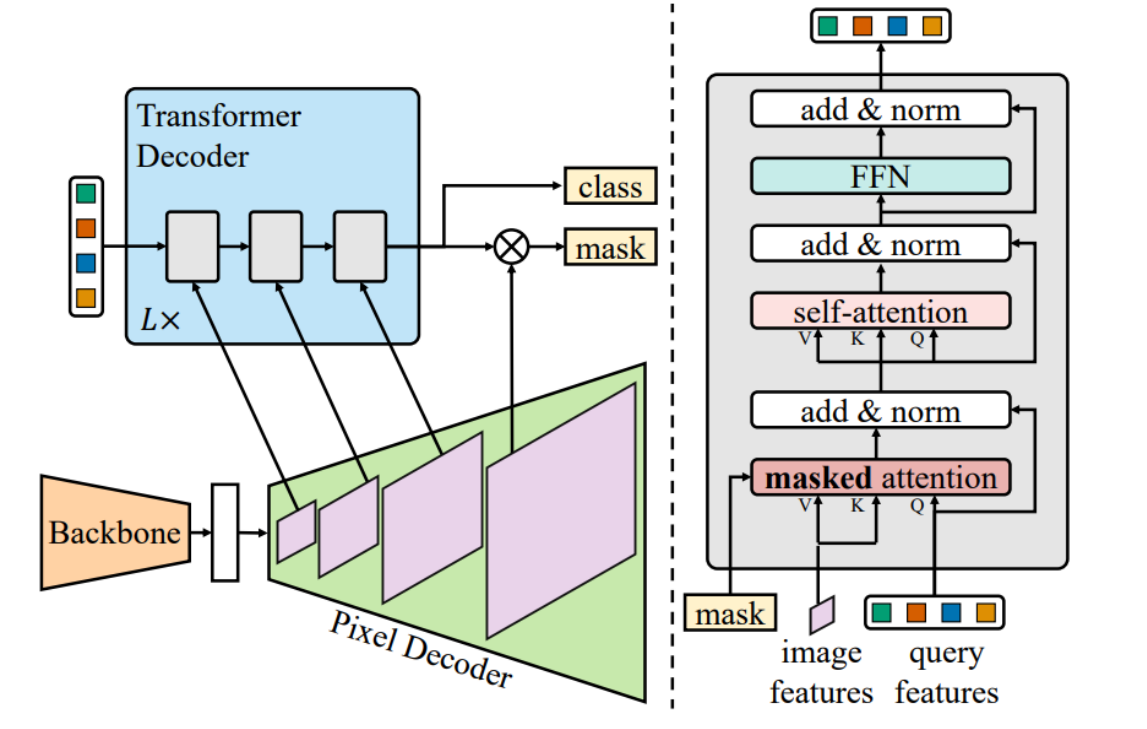
<Panoptic Segmentation>

Practices

Panoptic Segmentation <Task>

Objective. Fine-tune a pre-trained Panoptic Segmentation model on the Cityscapes dataset using the MMDetection library.

Mask2Former



Mask2Former

Short description

- Environment Setup

> Setup Google Collab

> Install MMDetection and its dependencies

> Ensure access to a GPU for model training and inference (Collab T4, after – Vast.ai)

Google Collab example

Short description

- Data Preparation Setup

> Download the Cityscapes dataset

> Familiarize yourself with its structure and annotations

> Prepare the dataset in a format compatible with MMDetection

Useful link

Short description

- Model Selection

> Choose a pre-trained Panoptic Segmentation model trained on the COCO dataset. For example Mask2Former

> Run inference on sample images from the Cityscapes dataset

> Implement panoptic inference visualization

> Implement PQ, SQ, RQ metrics estimation

> Evaluate pretrained model on Cityscape dataset

Short description

- Fine-Tuning Process

Useful links: Link1 , Link2

> Load the pre-trained model into the MMDetection framework

> Set up the configuration for fine-tuning, including learning rate, batch size, and other hyperparameters

> Begin the fine-tuning process on the Cityscapes dataset

> Monitor training progress using metrics like loss and IoU

Short description

- Evaluation

> Evaluate the fine-tuned model on a validation set from the Cityscapes dataset

> Analyze the results and compare them with the pre-trained model's performance

<Q&A>

SEE YOU
NEXT TIME ;)

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