CV Course1 data preparation

Blake

Outline

1. Data source
2. Data augmentation
    a. Imgaug
    b. Torchvision.transforms

Data source

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Open Data Source:

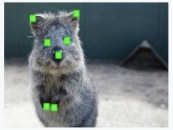
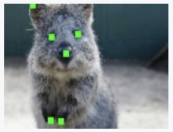
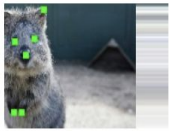
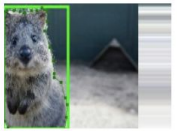
- Google Dataset Search
- 各领域公开数据集下载
- Awesome Public Datasets
- Kaggle Datasets
- Reddit Datasets
- Open Images Dataset V5 +
- BIFROST Visual Datasets
- 政府資料開放平台
- 內政資料開放平臺｜MOI Open Data
- Open Data Taipei

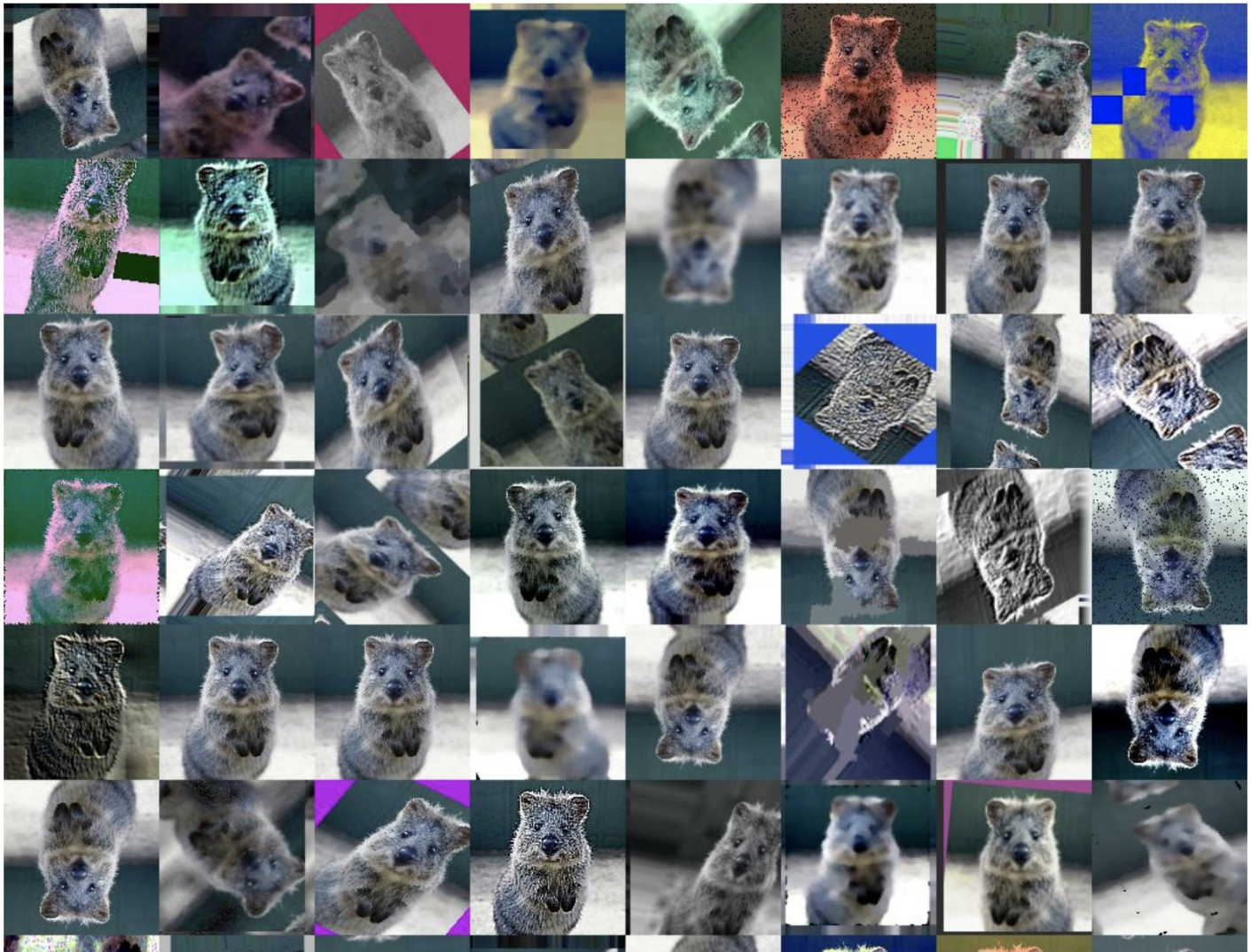
Open Source Labeling Software:

- Images: Labelbox
- Image Polygonal Annotation: MIT LabelMe / LabelMe
- Audio: Praat
- Video: ANVIL
- AI領域的藍領工作 - Image Labeling

Data augmentation

Imgaug

	Image	Heatmaps	Seg. Maps	Keypoints	Bounding Boxes, Polygons
Original Input					
Gauss. Noise + Contrast + Sharpen					
Affine					
Crop + Pad					
Fliplr + Perspective					



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Data augmentation

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[torchvision.transforms]

Crop

- transforms.CenterCrop
- transforms.RandomCrop
- transforms.RandomResizedCrop
- transforms.FiveCrop
- transforms.TenCrop

Flip and Rotation

- transforms.RandomHorizontalFlip (p=0.5)
- transforms.RandomVerticalFlip(p =0.5)
- transforms.RandomRotation

Data augmentation

- transforms.Resize
- transforms.Normalize
- transforms.ToTensor
- transforms.Pad
- transforms.ColorJitter
- transforms.Grayscale
- transforms.LinearTransformation()
- transforms.RandomAffine
- transforms.RandomGrayscale
- transforms.ToPILImage

Data augmentation

- **transforms.RandomChoice(transforms)**
- **transforms.RandomApply(transforms, p=0.5)**
- **transforms.RandomOrder**

Thank You!