

Chapter 06. 무엇이든 진짜처럼 생성하는 생성 모델(Generative Networks)

# 응용하기 좋은 데이터셋 소개

# Basically Everything



Unsupervised Learning이 가능한 특성 상, 모든 데이터셋이 활용 가능하다.

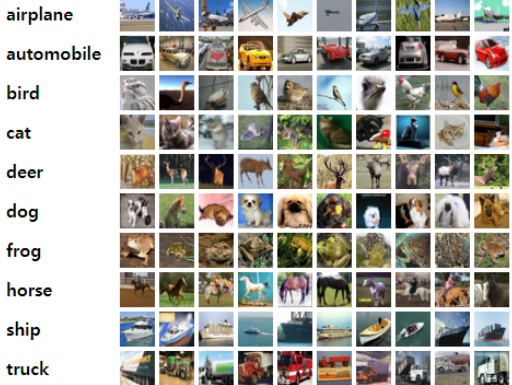
# CIFAR-10

## The CIFAR-10 dataset

The CIFAR-10 dataset consists of 60000 32x32 colour images in 10 classes, with 6000 images per class. There are 50000 training images and 10000 test images.

The dataset is divided into five training batches and one test batch, each with 10000 images. The test batch contains exactly 1000 randomly-selected images from each class. The training batches contain the remaining images in random order, but some training batches may contain more images from one class than another. Between them, the training batches contain exactly 5000 images from each class.

Here are the classes in the dataset, as well as 10 random images from each:



The classes are completely mutually exclusive. There is no overlap between automobiles and trucks. "Automobile" includes sedans, SUVs, things of that sort. "Truck" includes only big trucks. Neither includes pickup trucks.

## Download

If you're going to use this dataset, please cite the tech report at the bottom of this page.

Version	Size	md5sum
<a href="#">CIFAR-10 python version</a>	163 MB	c58f30108f718f92721af3b95e74349a
<a href="#">CIFAR-10 Matlab version</a>	175 MB	70270af85842c9e89bb428ec9976c926
<a href="#">CIFAR-10 binary version (suitable for C programs)</a>	162 MB	c32a1d4ab5d03f1284b67883e8d87530

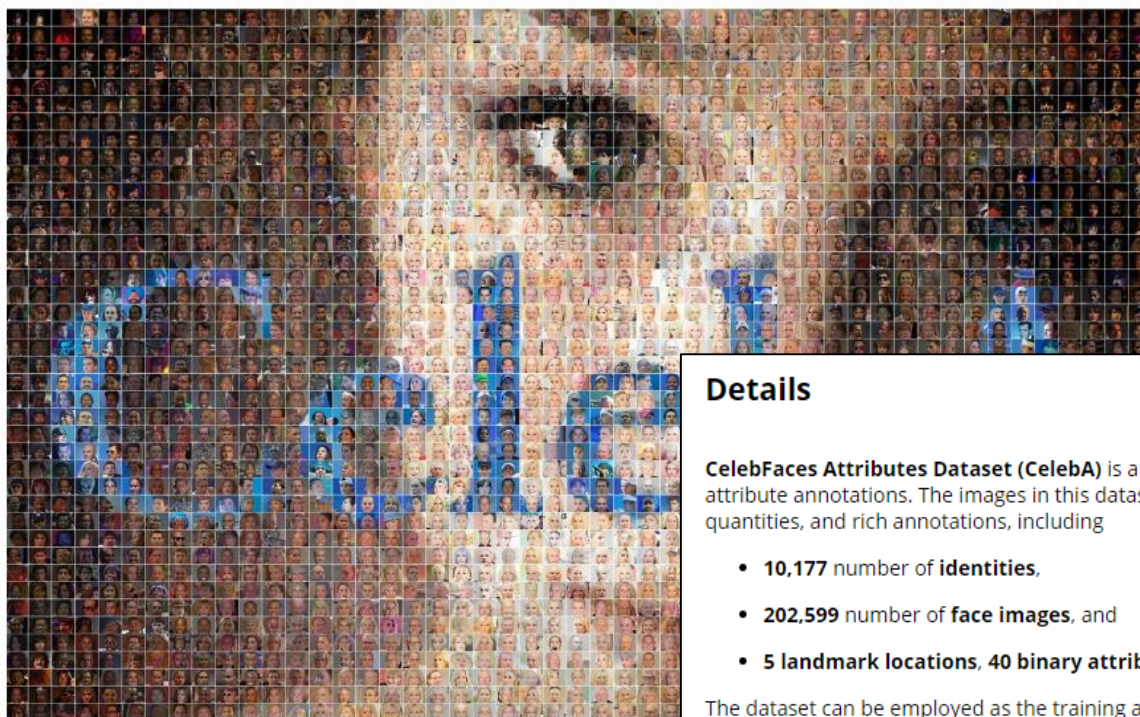
32x32 컬러 이미지로 되어 있는 CIFAR-10 Dataset. 생성 모델 학습에 많이 사용된다.

<https://www.cs.toronto.edu/~kriz/cifar.html>

# CelebA

## Large-scale CelebFaces Attributes (CelebA) Dataset

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### Details

**CelebFaces Attributes Dataset (CelebA)** is a large-scale face attributes dataset with more than **200K** celebrity images, each with **40** attribute annotations. The images in this dataset cover large pose variations and background clutter. CelebA has large diversities, large quantities, and rich annotations, including

- **10,177** number of **identities**,
- **202,599** number of **face images**, and
- **5 landmark locations**, **40 binary attributes** annotations per image.

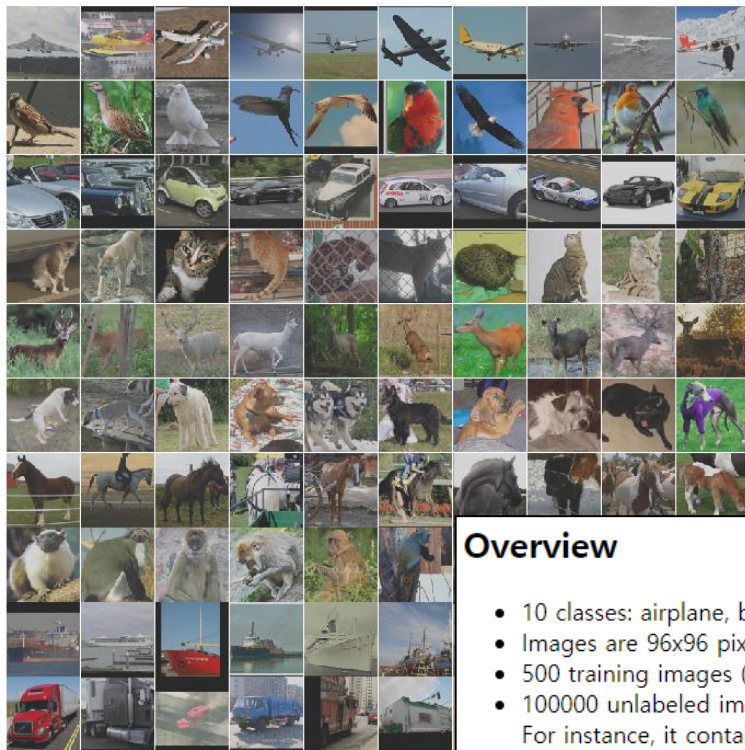
The dataset can be employed as the training and test sets for the following computer vision tasks: face attribute recognition, face detection, landmark (or facial part) localization, and face editing & synthesis.

다양한 목적으로 많이 사용되는 CelebA Dataset. Annotation을 이용하여 다양한 연구에 쓰인다.

<http://mmlab.ie.cuhk.edu.hk/projects/CelebA.html>



# STL-10



## Overview

- 10 classes: airplane, bird, car, cat, deer, dog, horse, monkey, ship, truck.
- Images are 96x96 pixels, color.
- 500 training images (10 pre-defined folds), 800 test images per class.
- 100000 unlabeled images for unsupervised learning. These examples are extracted from a similar but broader distribution of images. For instance, it contains other types of animals (bears, rabbits, etc.) and vehicles (trains, buses, etc.) in addition to the ones in the labeled set.
- Images were acquired from labeled examples on [ImageNet](http://www.image-net.org/).

ImageNet 데이터셋을 이용해 제작한 CIFAR-10보다 고화질로 구성된 Dataset

# FFHQ Flickr-Faces-HQ Dataset



## Overview

All data is hosted on Google Drive:

Path	Size	Files	Format	Description
<a href="#">ffhq-dataset</a>	2.56 TB	210,014		Main folder
└ <a href="#">ffhq-dataset-v2.json</a>	255 MB	1	JSON	Metadata including copyright info, URLs, etc.
└ <a href="#">images1024x1024</a>	89.1 GB	70,000	PNG	Aligned and cropped images at 1024×1024
└ <a href="#">thumbnails128x128</a>	1.95 GB	70,000	PNG	Thumbnails at 128×128
└ <a href="#">in-the-wild-images</a>	955 GB	70,000	PNG	Original images from Flickr
└ <a href="#">tfrecords</a>	273 GB	9	tfrecords	Multi-resolution data for <a href="#">StyleGAN</a> and <a href="#">StyleGAN2</a>
└ <a href="#">zips</a>	1.28 TB	4	ZIP	Contents of each folder as a ZIP archive.

Flickr에서 수집된 고화질 얼굴 영상 모음으로, 연구 목적으로 공개된 Dataset