

ActiveFace Dataset

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1 Dataset Description

ActiveFace is a synthetic face image dataset was generated using Unity’s Perception package.

It consists of **175428** face images taken at different environments, lighting conditions, camera distances and angles. In total, the dataset contains images for **8** environments, **33** humans, **4** lighting conditions, **7** camera distances (1m-4m) and **36** camera angles (0-360 at 10-degree intervals). Figure 1 show some example images of the dataset. Note that lower resolution images correspond to larger distances between the subject and the capturing sensor.



Figure 1: ActiveFace image examples.

The dataset does not include images at every single combination of available camera distances and angles, since for some values the camera would collide with another object or go outside the confines of an environment. As a result, some combinations of camera distances and angles do not exist in the dataset.

The dataset was used to train and evaluate active vision approaches with great success [1], [2], [3].

2 How to Download

You can download the dataset [here](#).

2.1 Folder Configuration

The dataset consists of **33** main folders each one containing all the face images for one human. Each main folder consists of **32** subfolders, each one containing that person’s face images for one combination of environment and lighting condition. Each subfolder is named **x_y**, where **x** denotes the id of the environment and **y** denotes the id of the lighting condition.

2.2 Naming Conventions

Each image is named *e_h_l_d_r.jpg*, where:

- **e** denotes the id of the environment.
- **h** denotes the id of the person.
- **l** denotes the id of the lighting condition.
- **d** denotes the camera distance at which the image was captured.
- **r** denotes the camera angle at which the image was captured.

References

- [1] C. Georgiadis, “Generation of a synthetic annotated dataset for training and evaluating active perception methods,” BSc Thesis, Aristotle University of Thessaloniki, (2022) <https://doi.org/10.13140/RG.2.2.21002.34248>.
- [2] E. Kakaletsis and N. Nikolaidis, “Using synthesized facial views for active face recognition,” Machine Vision and Applications, (2023), <https://doi.org/10.1007/s00138-023-01412-3>.
- [3] C. Georgiadis, N. Passalis and N. Nikolaidis, “ActiveFace: A Synthetic Active Perception Dataset for Face Recognition,” Proceedings of the IEEE 25th International Workshop on Multimedia Signal Processing, 2023, https://opendr.eu/wp-content/uploads/2023/09/OpenDR_MMSP2023.pdf.