AEYES: ADVERTISING BASED ON GENDER AND AGE

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ABSTRACT

Advertising is an integral part of any company's promotion mix; All the companies use advertising as one of the major elements of their entire communication plan. The effect of advertisements relays mainly on age group and gender, because interest differ with age and gender. In this project we will build a deep learning model to predict people age and gender in order to determine the type of advertisement that is most suitable for display.
AEyes (Advertisement Eyes): is advertisement company that uses Machine Learning to utilizes their advertisements.

DESIGN

Facial analysis from images has gained a lot of interest because it helps in several different problems especially for ad targeting. Age and gender are a very important part of facial attributes and identifying them are the very basic of facial analysis and a required step for such tasks. Many companies are using these kinds of tools for different purposes making it easier for them to work with customers, cater to their needs better and create a great experience for them. It is easier to identify and predict needs of people based on their gender and age. Our target is to predict age and gender to have better advertisement display for our target customers.

DATA

UTKFace dataset is a large-scale face dataset with long age span (range from 0 to 116 years old). The dataset consists of over 20,000 face images with annotations of age, gender, and ethnicity. The images cover large variation in pose, facial expression, illumination, occlusion, resolution, etc. The labels of each face image is embedded in the file name, formated like [age]_[gender]_[race]_[date&time].jpg

ALGORITHM

1. Importing libraries and upload data.
2. Extract each image labels (age, gender) of each image name.
3. EDA on the data (visualize age and gender distribution).
4. Reformat images shape.
5. Splitting the data 20\80
6. Build and train model (CNN model used)
7. Evaluate model
8. Test images prediction

TOOLS

- Pandas library.
- Keras
- Matplotlib
- TensorFlow
- NumPy
- OpenCV