Classifying Interior Design Styles Using CNN

BY: NADAI ALGHAMDI
MANAL ALQAHTANI

Abstract:

Interior design involves a high amount of guessing. Although a room's style can be predefined and categorized, these are typically hard to classify it by non experts. Thus, our goal is to classify some interior designs for different rooms based on their style; we focus on the two primary styles : modern, classic (old).In order to achieve this goal, we utilized deep neural networks

Design

After obtaining the data from Kaggle which wasn't labeled. Thus we searched online for another source for the same data; we found the data labeled manually by someone.Then, we started by splitting our data into train-test split using (75%, 15%, 10% for train, test and validation respectively). The dataset we used for training is BEDROOM folder, and it is relatively small, so it is good to randomly augment images using random transformation. After that training the models has in place. For the training we used transfer learning method which follows two steps. Feature extraction and fine tuning. The Final result we conclude with is that: as using EfficientNetB0 as base model, each time we adjust the number of epochs and the learning rate, the AUC has increased slightly and the loss has dramatically increased. The last step is to evalute our model by trying new bedroom images and we found that classification is done perfectly!

Data

The data has obtained from Kaggle website

Algorithm

Buliding CNN

Tools

- Seaborn
- Matplotlib
- Tensorflow
- Keras
- Scikit learn

Communication

https://view.genial.ly/61ab765c3e98cb0d9279dfe0/social-vertical-post-interior-design-classificationproject-5