We want to learn meaningful features from fine-art paintings, and possibly semantically relate them to other classification problems. To do so, we design a novel CNN architecture to learn features from images of art paintings. Our strategy is demonstrated in a data set consisting of 80,000 fine-art paintings ranging from 15th century to modern times. The set includes 27 styles from all genres and 10 fine-art genres with more than 1,000 paintings each (~45,000 samples). We compare different models: 

1. CNN
2. CNN-nofine
3. CNN-SVM
4. CNN-1000
5. CNN-finetune
6. CNN-1024
7. CNN-PCA-SVM
8. Saleh and Elgammal

We observe that the best-performing CNN-finetune CNN (CNN-1024) only deteriorates 2% accuracy. This is caused by relationship between styles: Synthetic cubism vs analytical cubism (same artist)

In future work, we design a better model to learn features from fine-art paintings, and possibly semantically relate them together. To do so, we investigate different visualization techniques for better understanding of how CNN extracts features from paintings. We design a generative model that is able to reconstruct and draw the paintings.