

In this thesis we compare machine learning techniques for the art classification task. We compare several pre-trained deep learning approaches, including the Residual Neural Network, EfficientNet, Densely Connected Convolutional Network, MobileNet, and Vision Transformer. We implement an approach that extracts features using deep learning methods and combines them with the features extracted by classical computer vision algorithms, then classifies them using machine learning classifiers. We compare the performance of selected classifiers using features extracted from various layers of chosen deep learning methods, combined with hand-engineered features. We apply the best-performing classifiers in combination with the best-performing feature extraction strategy for the genre classification task and the style classification task using cropped facial regions. In addition, we compare the described tasks from a classification perspective and evaluate the performance of applied classifiers.