

ART STYLE CLASSIFICATION



Team members:

Aparna S.

Rubashree R.

Sakthikailash SV.

Sangeetha S.

CB.AI.U4AIM24104

CB.AI.U4AIM24139

CB.AI.U4AIM24140

CB.AI.U4AIM24142

Faculty:

Dr. Manimaran S.

Dr.Prem Jagadeshan



Introduction

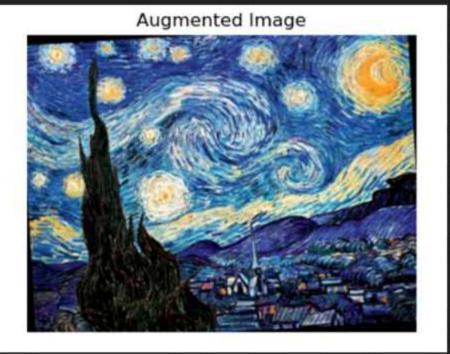
Art has developed over varied styles, each with unique features and historical relevance. This project investigates the categorization of artworks into various artistic styles based on three different methods. Through a comparison of their performance, we seek to establish the best method for correctly identifying and classifying artworks.



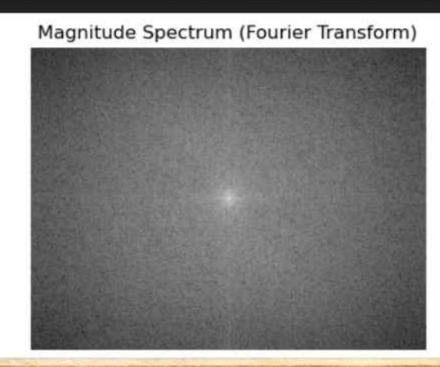
What has been done











Review Questions

Review comments	Solutions
Why have we used Fourier transform?	For image classifications, the textures and patterns in the images are important. By analyzing the frequency components we can classify better, so we use Fourier transform which converts spatial to frequency domain with the reference of: https://arxiv.org/pdf/2106.11478
Why have we used CNN?	CNNs are better than other models because they automatically learn image features, reducing the need for manual feature extraction. They are also more efficient, accurate, and robust to changes in position, size, and lighting. https://arxiv.org/abs/1610.07629



Review comments	Solutions
Is there any hybrid model paper ?	https://dergipark.org.tr/en/download/article- file/4008785
Why Lists and Not Another Data Structure?	 Lists allow dynamic appending (images.extend()). Lists maintain order, which is useful when splitting into subsets. Lists support easy shuffling (shuffle(images)). Lists allow efficient slicing (images[:split] and images[split:split + test_split]).





Dataset



Source: Kaggle

https://www.kaggle.com/datasets/sivarazadi/wikiart-

art-movementsstyles/data



The "Surreal Symphonies" dataset offers a comprehensive collection of 42,500 JPEG images



These images categorized into 13 distinct art styles, including Academic Art, Expressionism, Neoclassicism, Realism, Renaissance, and Symbolism.

What has been done review-2

FFT + Xception:

why xception?

The significance of depth-wise separable convolutions in facilitating

- 1. effective feature extraction and representation learning
- 2. Reduce the computational cost

with reference to:

https://www.internationaljournalssrg.org/IJECE/2024/Volume11-Issue9/IJECE-V11I9P102.pdf

FFT + EfficientNet

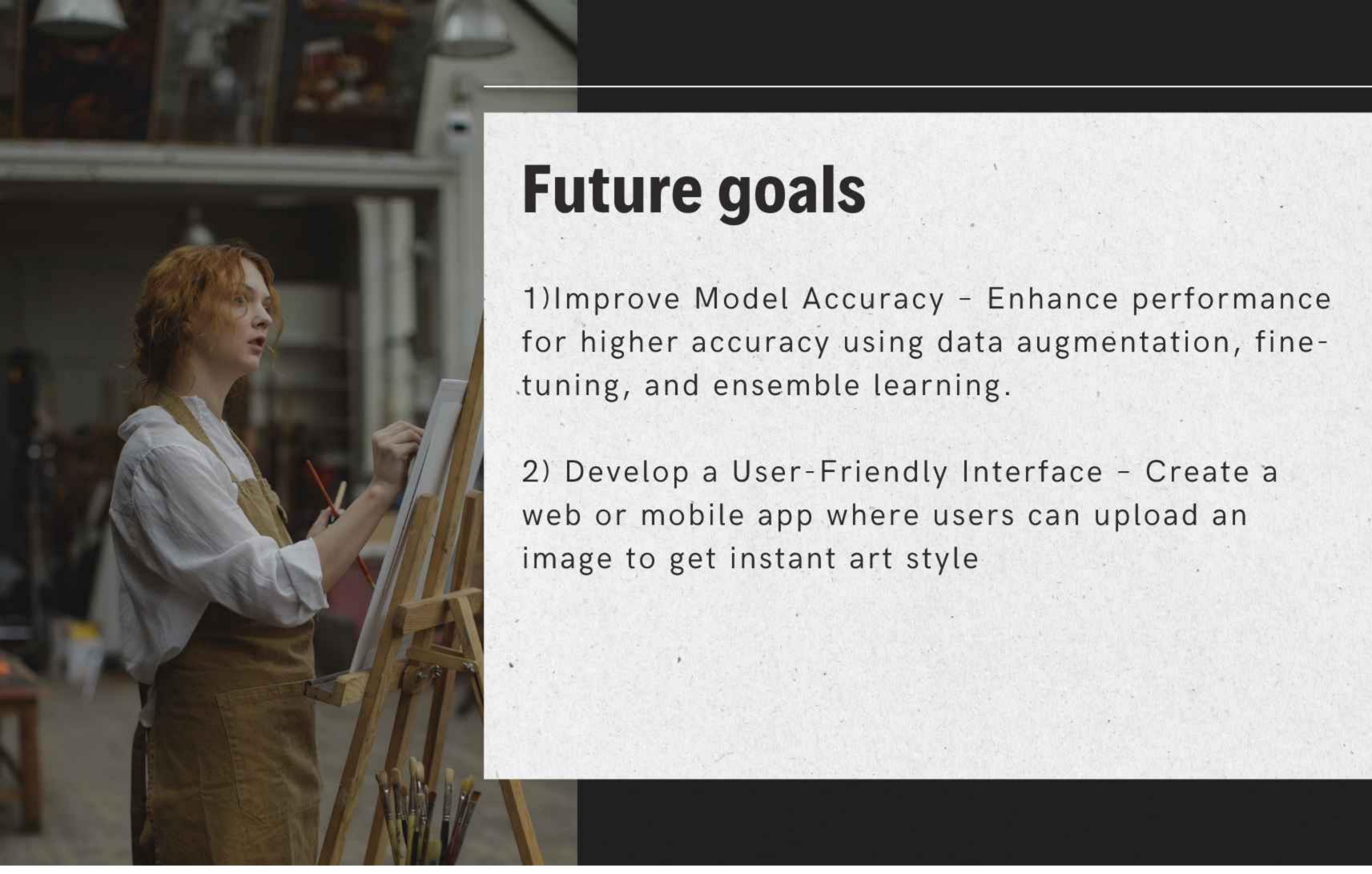
Why EfficientNet?

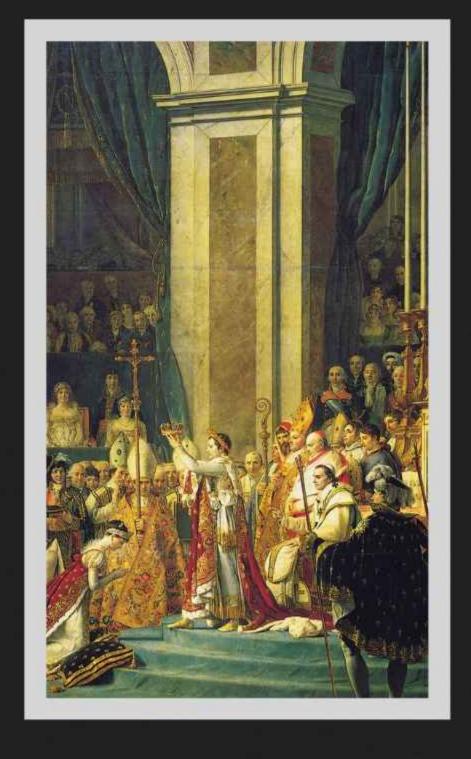
EfficientNet is useful because its compound scaling optimally balances depth, width, and resolution, ensuring better feature extraction with fewer parameters.

With reference to:

Image-based malware representation approach with EfficientNet convolutional neural networks for effective malware classification

a Dept. of Computer Science, University of Texas at San Antonio, San Antonio, TX 78249, USA b Center for Artificial Intelligence, Prince Mohammad Bin Fahd University, Khobar, Saudi Arabia





Thank You!



