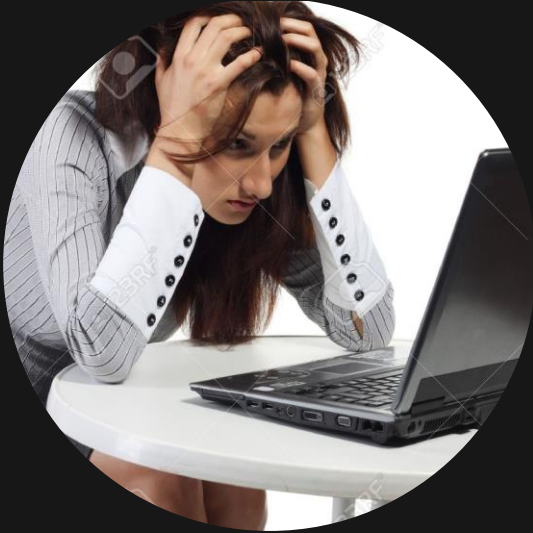


NEURAL STYLE TRANSFER OF ASIAN PAINTING

Boon Jun



PROBLEMS?



Long Duration Manual Work



Talent Dependent



Highly Competitive

**MAKE DIGITAL CONTENT
GENERATION EASY**

**FOR
DESIGN COMPANY**

HOW?



+



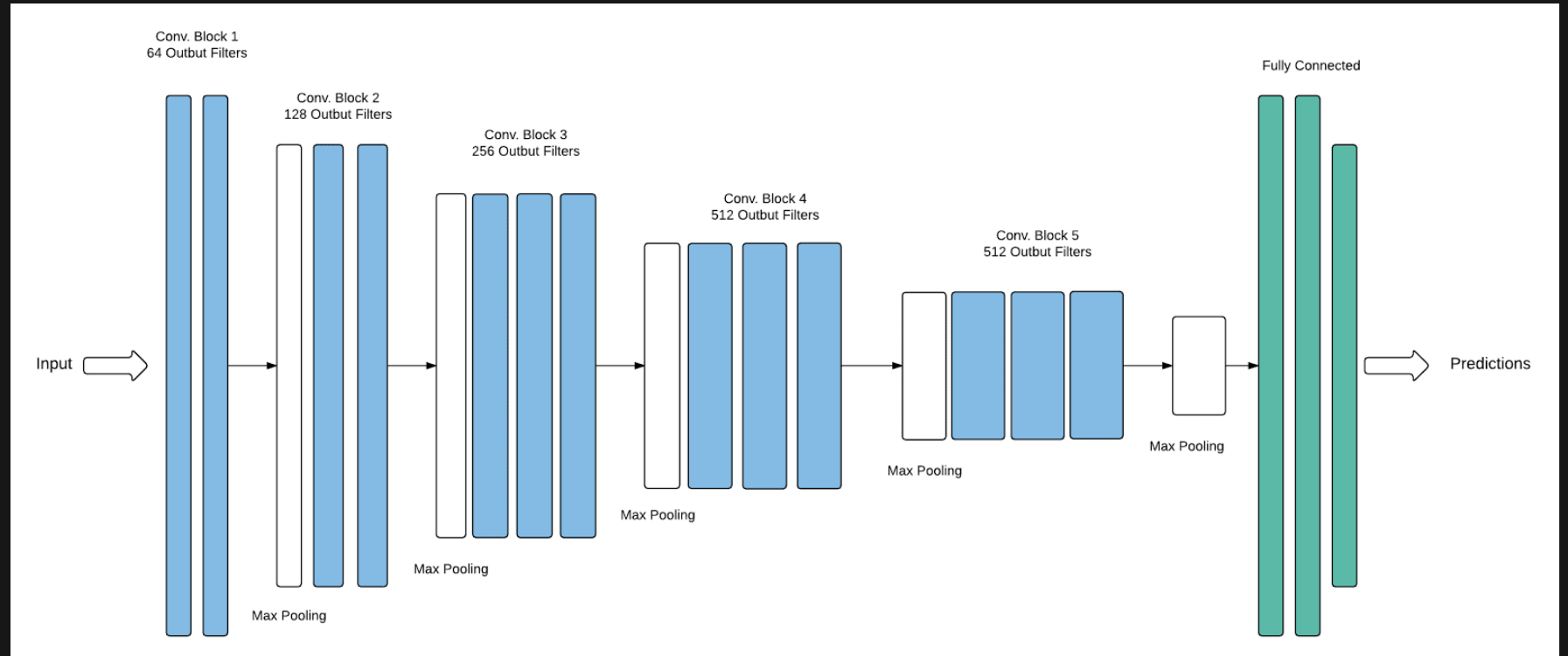
=



WITH Convolutional Neural Network

HOW?

VVG19

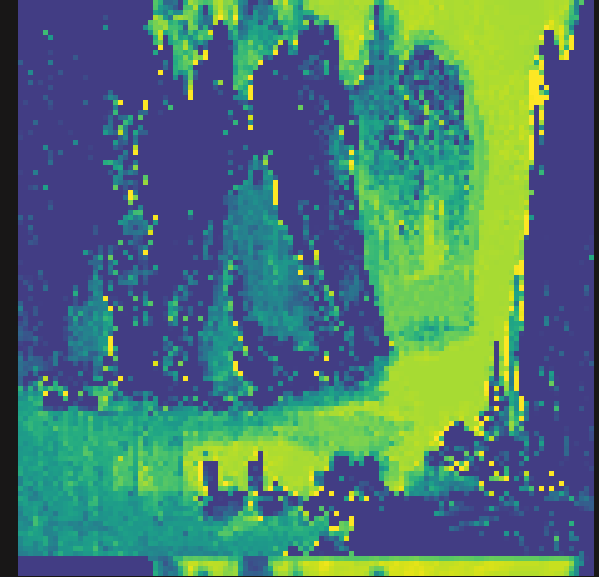


Trained to extract different image features on it owns

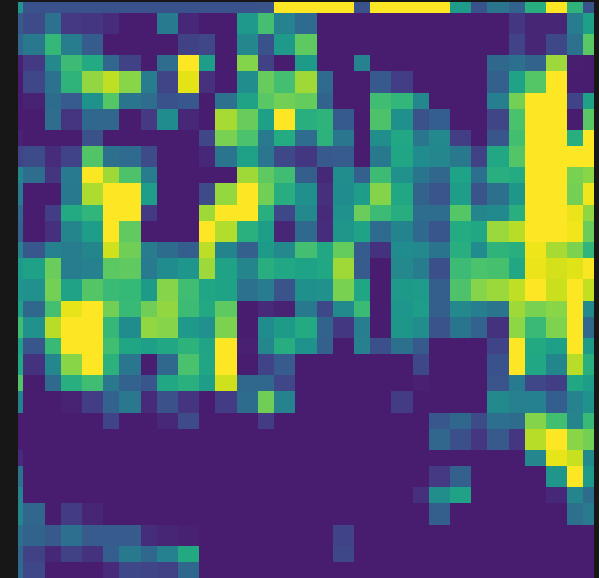
HOW?



Layer 1



Layer 5



3 NEURAL STYLE TRANSFER (NST) MODELS



Model 1

Original NST



Model 2

Transfer Learning



Model 3

Autoencoder + WCT

MODEL 2



Dataset

100 Chinese Painting
8 categories



Augmentation

944 paintings
Avg 100/categories



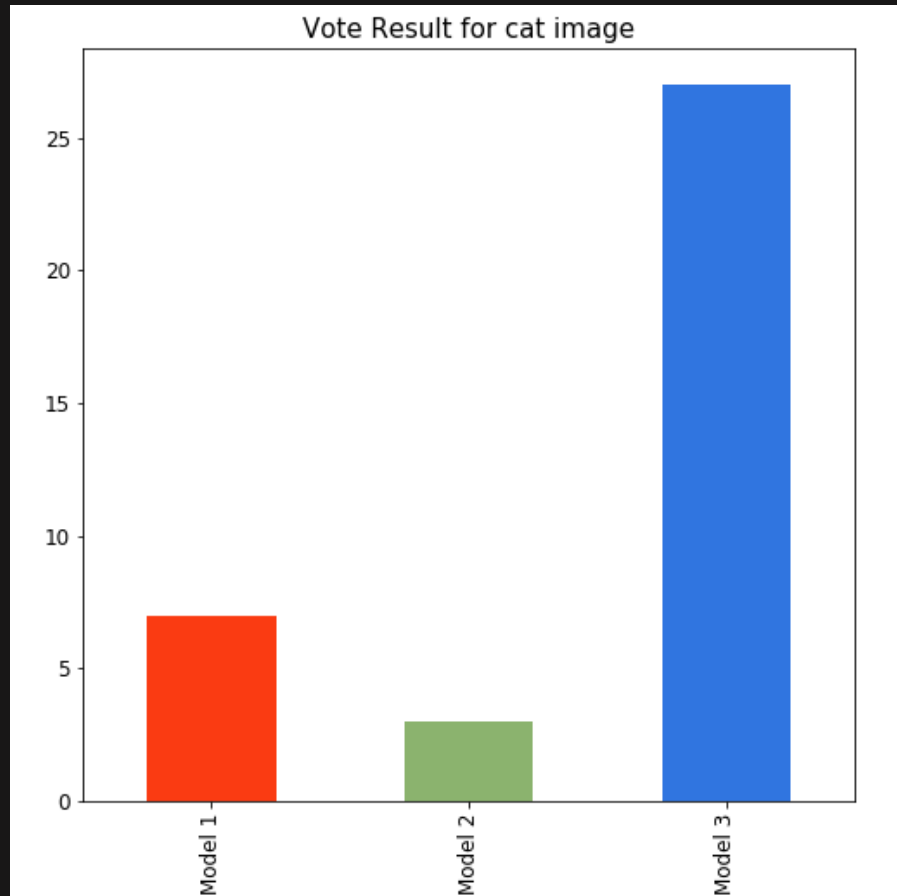
Transfer Learning

Training accuracy: 0.99
Validation accuracy: 0.93

EVALUATION

Based on 37 votes from google form

EVALUATION



Content Image



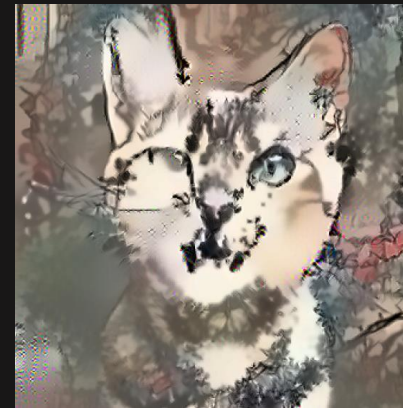
Style Image



Model 1



0



Model 2



0

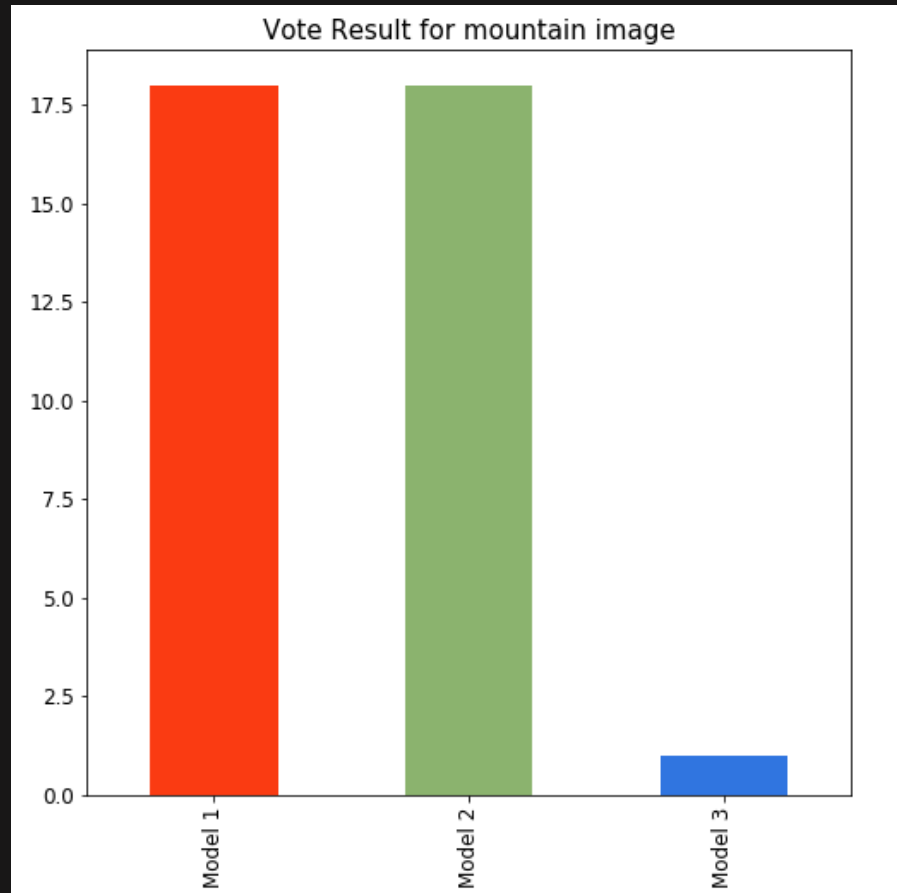


Model 3



1

EVALUATION



Content Image



Style Image



Model 1



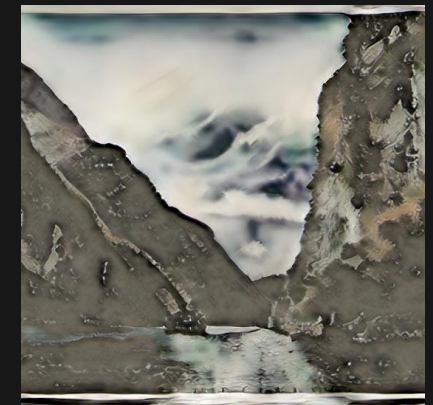
1



Model 2



1

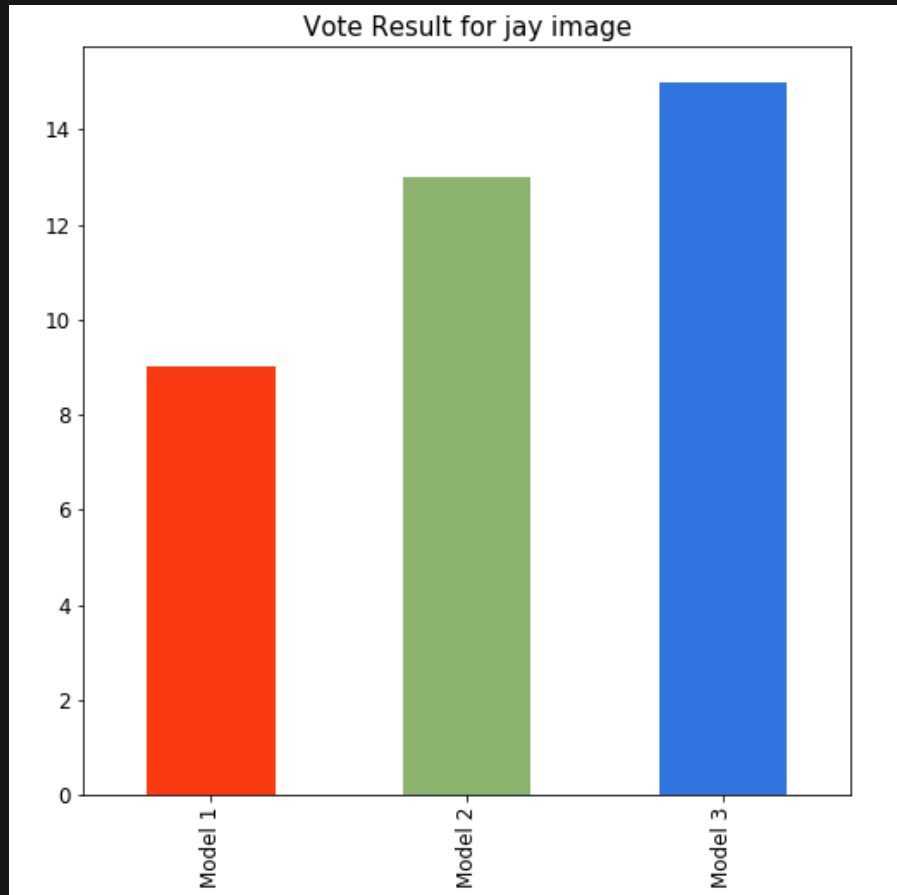


Model 3



1

EVALUATION



Content Image



Style Image



Model 1



1



Model 2



1

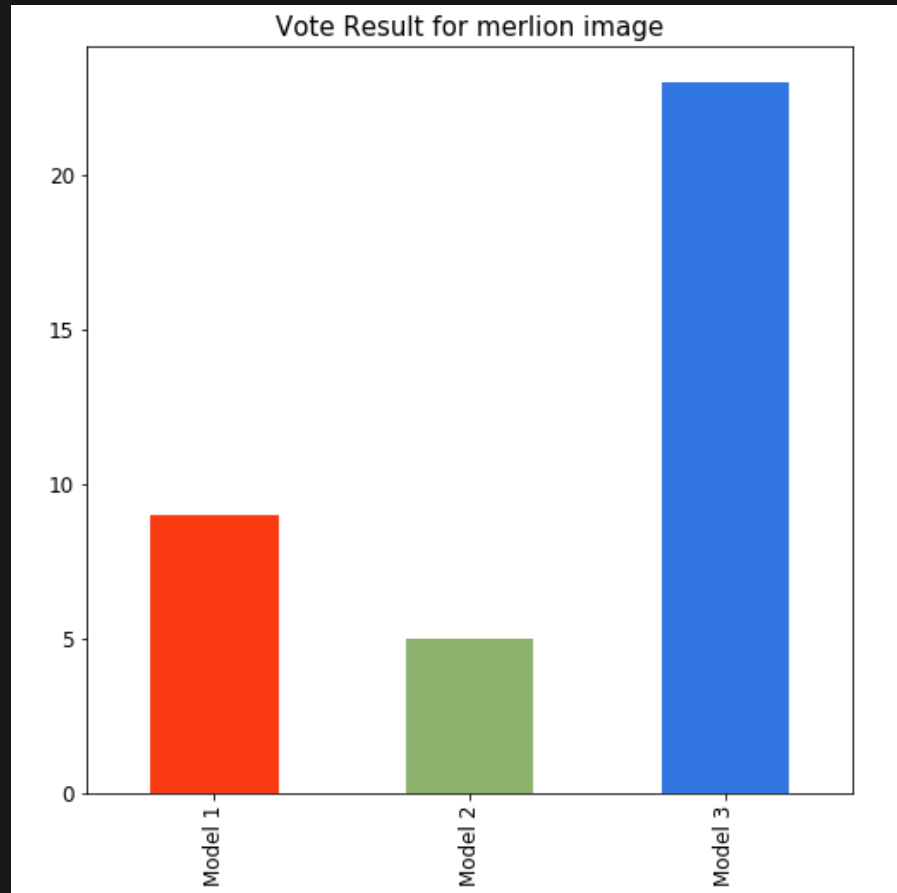


Model 3



2

EVALUATION



Content Image



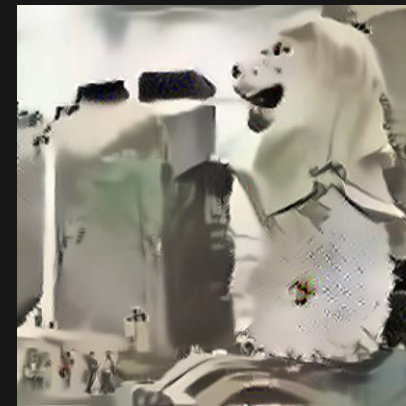
Style Image



Model 1



1



Model 2



1

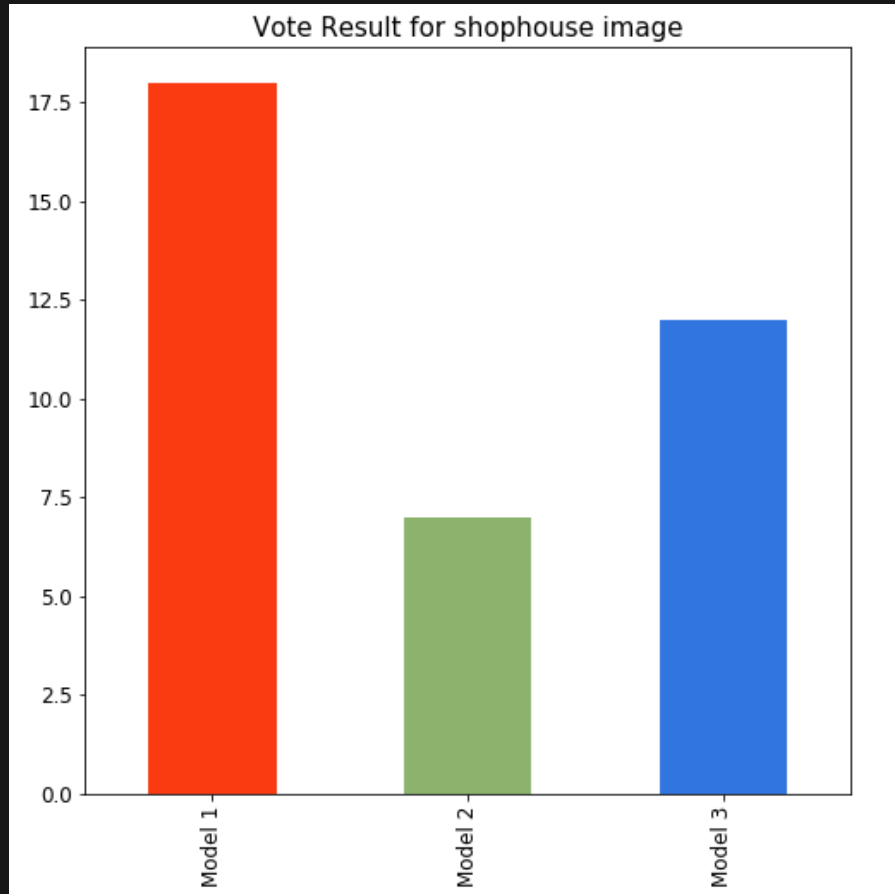


Model 3



3

EVALUATION



Content Image



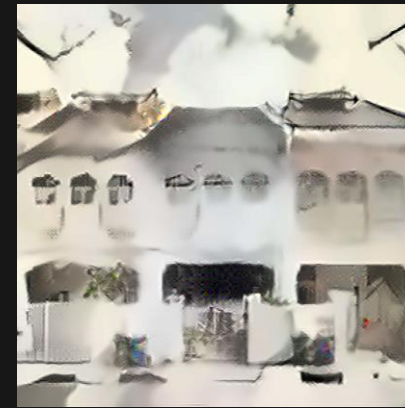
Style Image



Model 1



2



Model 2



1



Model 3



3

CONCLUSION

Model 1



2

Avg run time : 5-15 mins

Model 2



1

Avg run time : 5-15 mins

Model 3



3

Avg run time : 2-3 mins

RECOMMENDATIONS

Include more techniques to control the style transfer

Improve image resolutions for high quality printing

Optimise model run time with GPU

Real time NST for video/webcam

THANK YOU

