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Proxy Attention : Comparing and Combining Augmentation with Attention

Graduation Project Proposal
(Computational Intelligence and Robotics)

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Oct 25 2022

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1.2 Motivation

1.3 Challenges

1.4 Problem Statement

1.5 Research Questions

1.6 Thesis Outline



CHAPTER 2

BACKGROUND

2.1 Interpretability

- Need for Interpretability

2.2 Gradient Based Explanations

- Taxonomy

2.3 Augmentation

- Taxonomy

2.4 Datasets

CIFAR 100

IIT pets

stanford dogs

imagenette

ASL

STATE OF THE ART

3.1 Gradient Based Explanations

Adaptive Whitening Saliency
 Bayesian Rule List
 Beware Of Inmates
 Cam
 Conductance
 Deconvnet
 Deep Fool
 Deep Inside Conv Nets
 Deep Lift
 Deep Visual Explanations
 Dynamic Visual Attention
 Embedding Knowledge Into Deep Attention Map
 Generalizing Adversarial Exp With Gradcam
 Gradcam++
 Graph Based Visual Saliency
 Guided Backprop
 Guided Gradcam
 Influence Of Image Class Acc On Saliency Map Esti
 Integrated Gradients
 Interpretation Is Fragile
 Lime
 Lrp
 Noise Tunnel
 Rise
 Saliency Map
 Sam Resnet
 Sanity Checks
 Scorecam
 Shap
 Smooth Grad
 Smooth Grad Square
 Sp Lime
 Summit
 The Unreliability Of Saliency Methods
 There And Back Again

Var Grad

Visualizing Impact Of Feature Attribution Baselines

3.2 Augmentation

Attentive Cutmix

Attributemix

Augmentaiton with curriculum leanring

Augmix

Co mixup

Cut and mix

GridMask

Hide and Seek

Image Mixing and deletion

Intra class part swapping

Keep augment

Latent space interpo

Puzzle mix

Randaugment

Random Erasing

Random distortion

Remix

Resizemix

Ricap

Saliencymix

Sample pairing

Smooth mix

Smote

Snap mix

Spec augment

Visual context Augmentation

3.3 Architectures

Resnet 18, 50

VGG

Vision Transformer

3.4 Summary and Limitations



CHAPTER 4

PROPOSED APPROACH

4.1 Design Decisions

Efficient Computation Updating Dataloaders Batched Implementation Callbacks Training Resumption Logging

4.2 Hyper Parameters

4.2.1 Clear Every Step

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Imagenet Normalize Tensor Num workers



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TIMM

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CHAPTER 7

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7.1 Contributions

7.2 Lessons Learned

7.3 Future Work



CHAPTER 8

APPENDIX