

Deep Restore

Inpainting Comparision

September 21, 2018

Description

- ▶ Comparison of 4 CNN approaches + 1 Perona-Malik architecture
- ▶ First two CNN approaches (Densenet and UNet) were trained to directly result in a RGB image
- ▶ CNN approach 3 and 4 (Densenet) where trained on a single channel to result in a single channel image. We train on R, G and B channel, so we have more training data. One approach has MSE other CEE.
- ▶ The Perona-Malik method uses following parameters (look at comparison perona-malik for parameter description):
 - ▶ α : 0.005
 - ▶ γ : 0.001
 - ▶ τ : 5
 - ▶ end time: 15
 - ▶ σ_g : 0.7
 - ▶ σ_t : 1.5

Train - Ex1



(a) Input



(b) Mask



(c) GT Output



(a) Densenet
one channel
MSE



(b) UNet
one channel
CEE



(c) densenet
one channel
CEE



(d) unenet
one channel
CEE



(e) Perona-Malik

Train - Ex2



(a) Input



(b) Mask



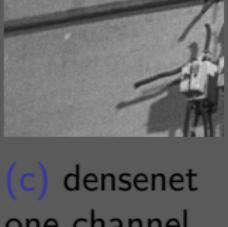
(c) GT Output



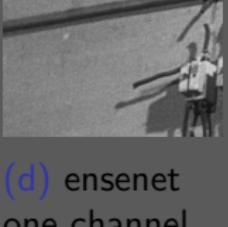
(a) Densenet



(b) UNet



(c) densenet
one channel
MSE



(d) densenet
one channel
CEE

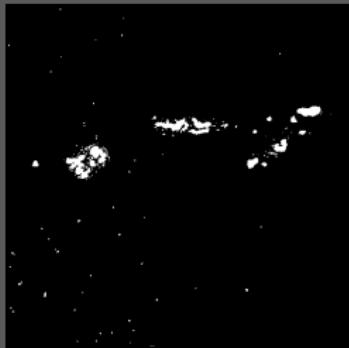


(e)
Perona-Malik

Train - Ex3



(a) Input



(b) Mask



(c) GT Output



(a) Densenet



(b) UNet



(c) densenet
one channel
MSE



(d) densenet
one channel
CEE

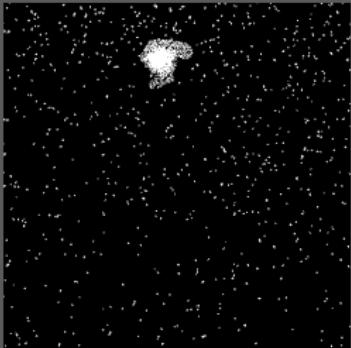


(e)
Perona-Malik

Train - Ex4



(a) Input



(b) Mask



(c) GT Output



(a) Densenet



(b) UNet



(c) densenet
one channel
MSE



(d) densenet
one channel
CEE

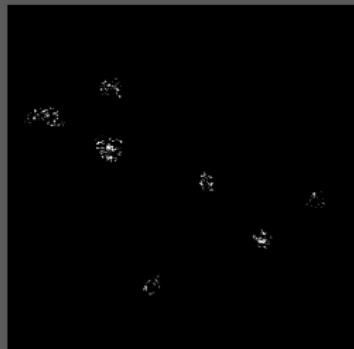


(e)
Perona-Malik

Train - Ex5



(a) Input



(b) Mask



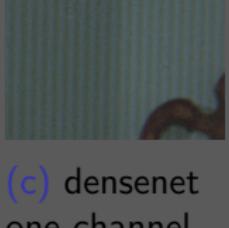
(c) GT Output



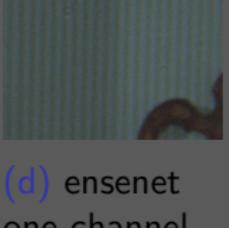
(a) Densenet



(b) UNet



(c) densenet
one channel
MSE



(d) densenet
one channel
CEE

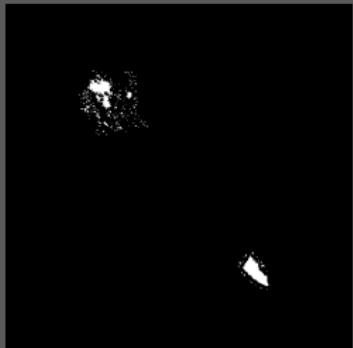


(e)
Perona-Malik

Train - Ex6



(a) Input



(b) Mask



(c) GT Output



(a) Densenet



(b) UNet



(c) densenet
one channel
MSE



(d) densenet
one channel
CEE



(e)
Perona-Malik

Train - Ex7



(a) Input



(b) Mask



(c) GT Output



(a) Densenet



(b) UNet



(c) densenet
one channel
MSE



(d) densenet
one channel
CEE

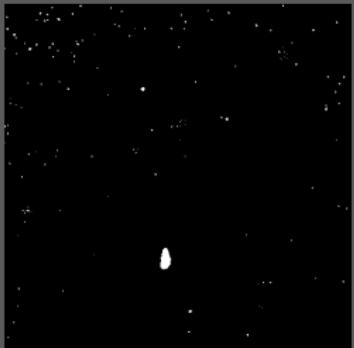


(e)
Perona-Malik

Train - Ex8



(a) Input



(b) Mask



(c) GT Output



(a) Densenet



(b) UNet



(c) densenet
one channel
MSE



(d) densenet
one channel
CEE



(e)
Perona-Malik

Train - Ex9



(a) Input



(b) Mask



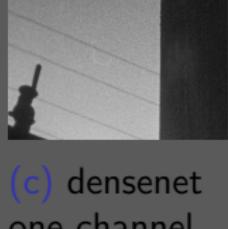
(c) GT Output



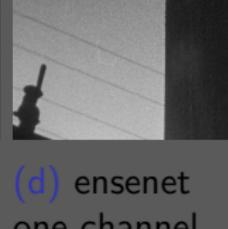
(a) Densenet



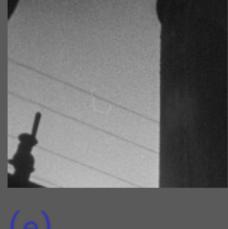
(b) UNet



(c) densenet
one channel
MSE



(d) densenet
one channel
CEE



(e)
Perona-Malik

Train - Ex10



(a) Input



(b) Mask



(c) GT Output



(a) Densenet



(b) UNet



(c) densenet
one channel
MSE



(d) densenet
one channel
CEE

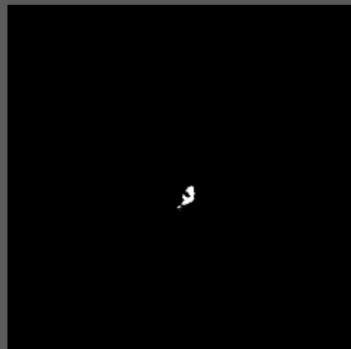


(e)
Perona-Malik

Train - Ex11



(a) Input



(b) Mask



(c) GT Output



(a) Densenet



(b) UNet



(c) densenet
one channel
MSE



(d) densenet
one channel
CEE

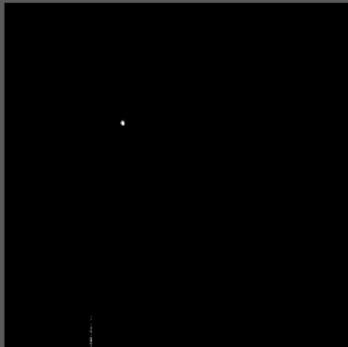


(e)
Perona-Malik

Train - Ex12



(a) Input



(b) Mask



(c) GT Output



(a) Densenet



(b) UNet



(c) densenet
one channel
MSE



(d) densenet
one channel
CEE

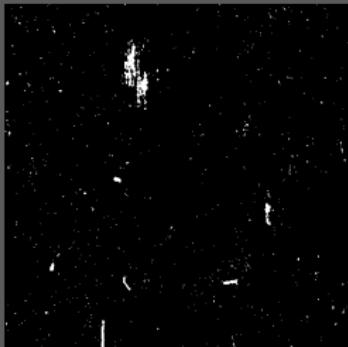


(e)
Perona-Malik

Train - Ex13



(a) Input



(b) Mask



(c) GT Output



(a) Densenet



(b) UNet



(c) densenet
one channel
MSE



(d) ensenet
one channel
CEE

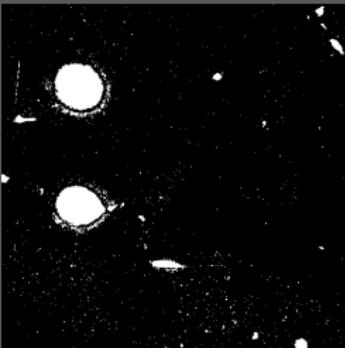


(e)
Perona-Malik

Train - Ex14



(a) Input



(b) Mask



(c) GT Output



(a) Densenet



(b) UNet



(c) densenet
one channel
MSE



(d) ensenet
one channel
CEE

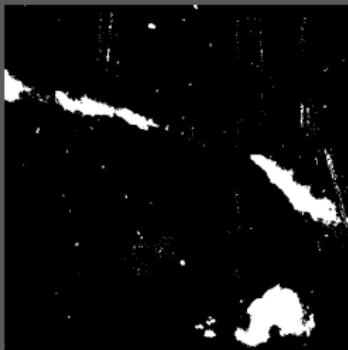


(e)
Perona-Malik

Train - Ex15



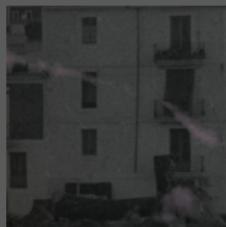
(a) Input



(b) Mask



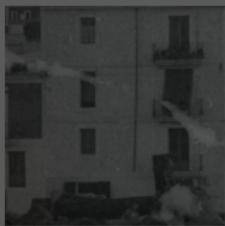
(c) GT Output



(a) Densenet



(b) UNet



(c) densenet
one channel
MSE



(d) densenet
one channel
CEE



(e)
Perona-Malik