



Restauration d'images (ou inpainting)

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Sommaire



1. Inpainting ?
2. Etat de l'art
3. Ce qu'on compte faire

Qu'est-ce que l'inpainting ?



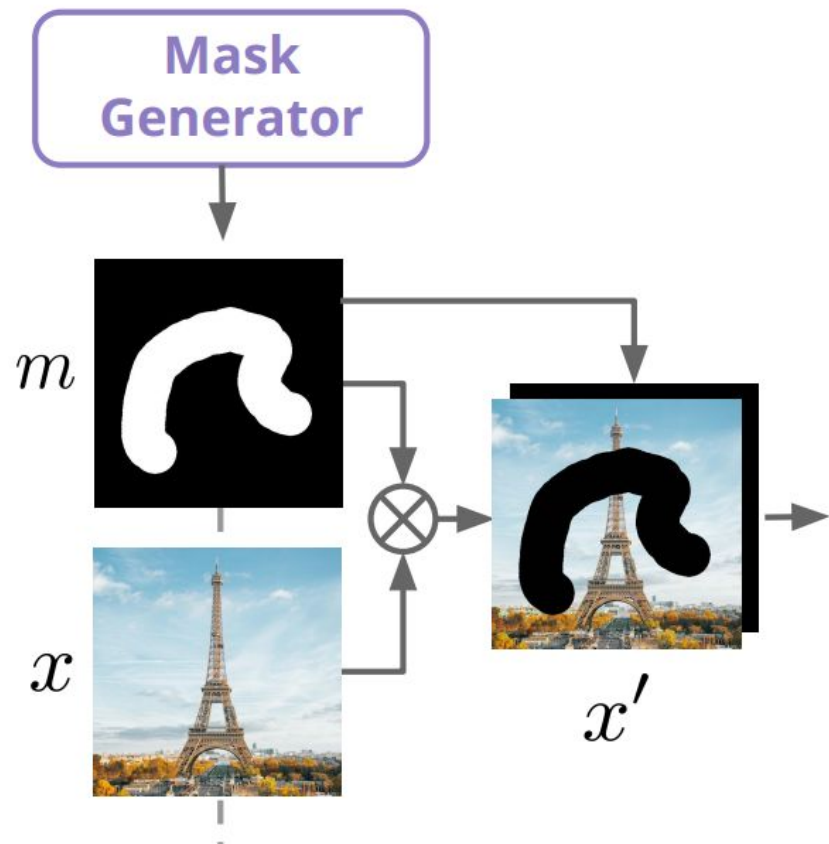
Préparation de données

Image récupérée depuis les datasets

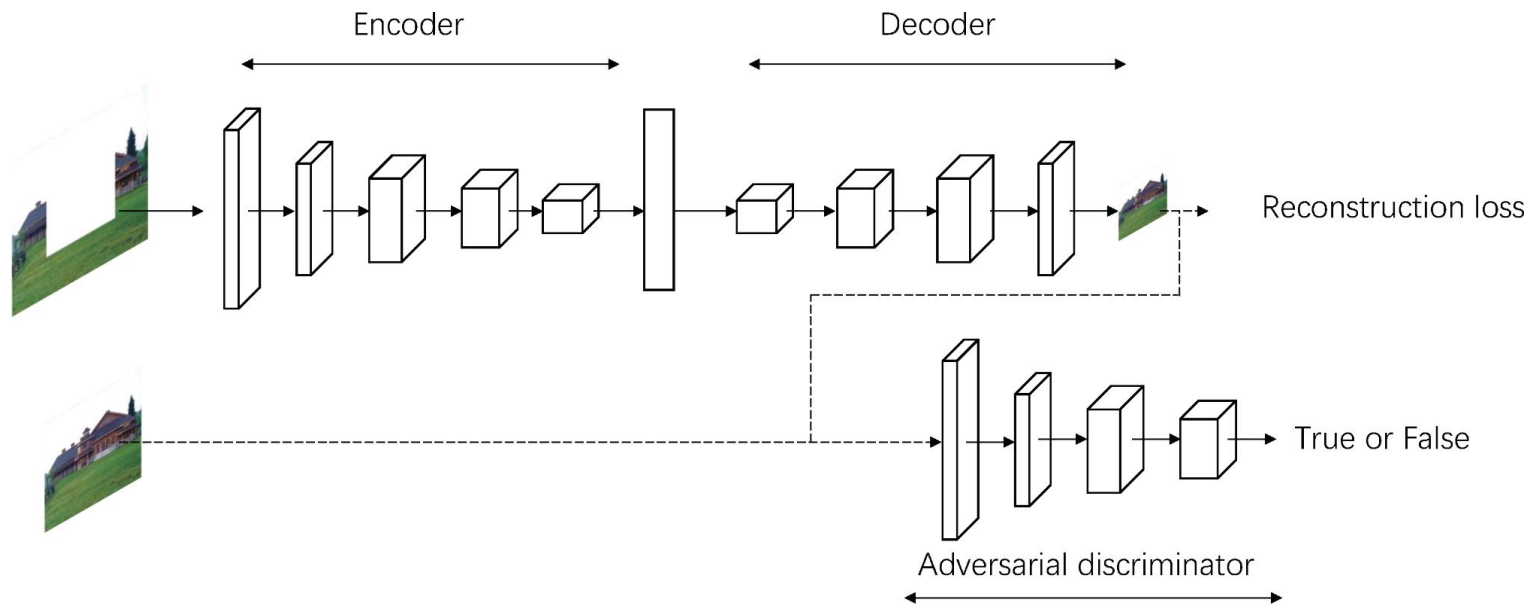
- Places2
- CelebA



Préparation de données



But du projet



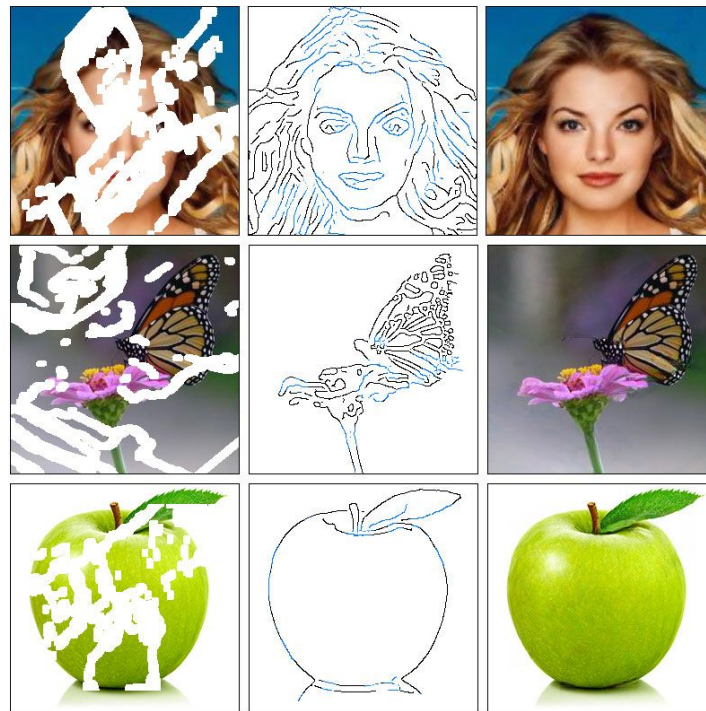


Etat de l'art

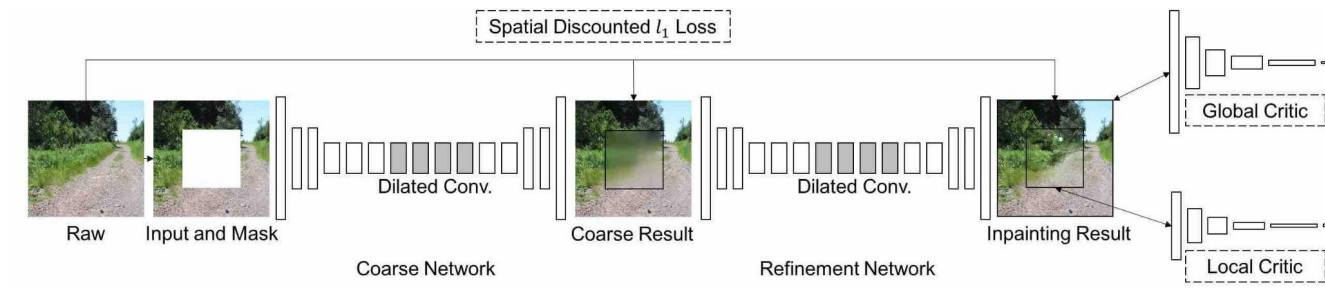
EdgeConnect (Nazeri et al. 2019)

Méthode basé sur deux étapes

1. D'abord les contours
2. Ensuite la couleur



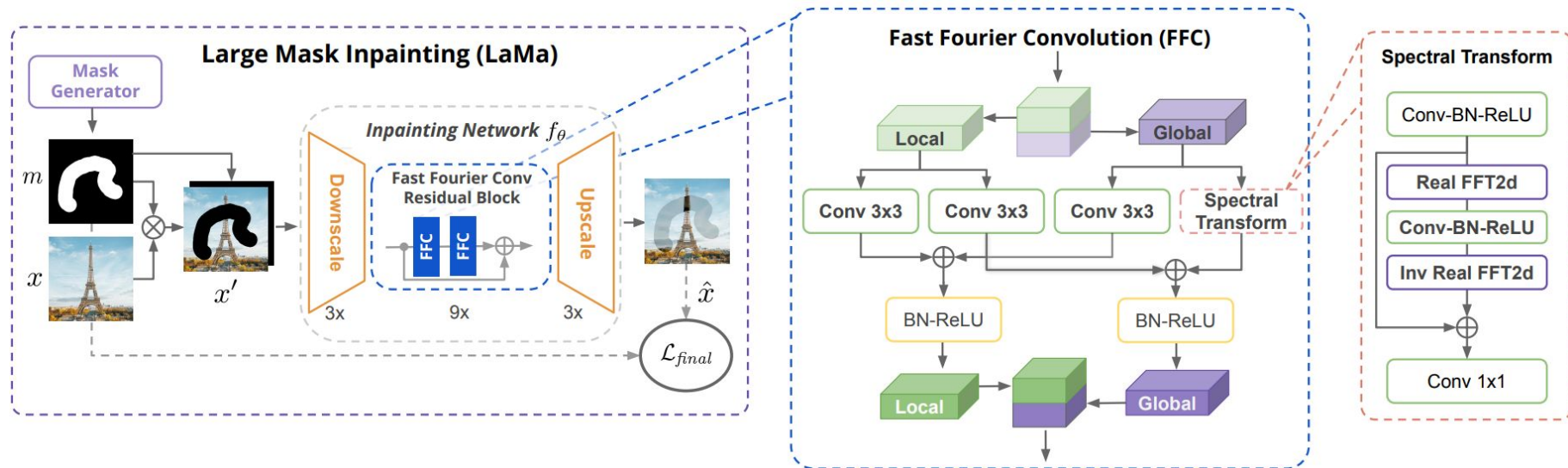
Contextual Attention (Yu et al. 2018)



Resolution-robust Large Mask Inpainting with Fourier Convolutions



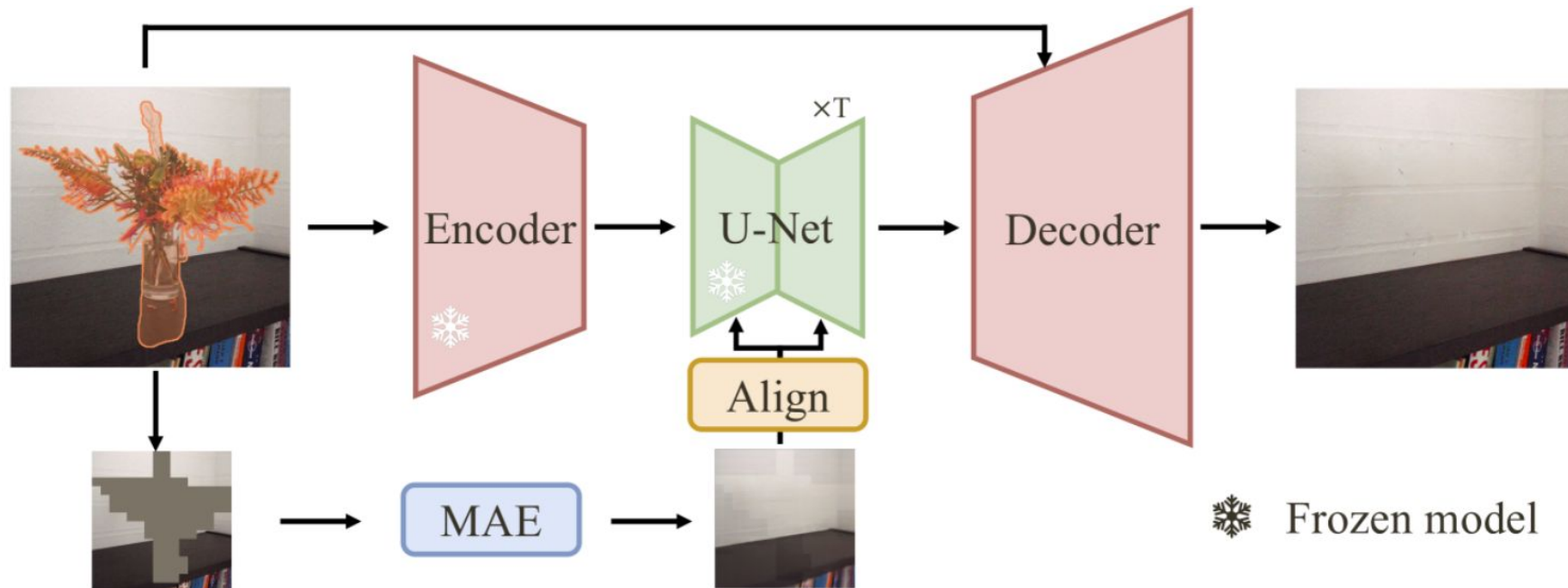
Resolution-robust Large Mask Inpainting with Fourier Convolutions



Aligned Stable Inpainting with UnKnown Areas Prior (ASUKA)



Aligned Stable Inpainting with UnKnown Areas Prior (ASUKA)



Aligned Stable Inpainting with UnKnown Areas Prior (ASUKA)

SD: Stable Diffusion -> text to image

MAE remplace la description textuelle de SD



Input Image with mask



MAE



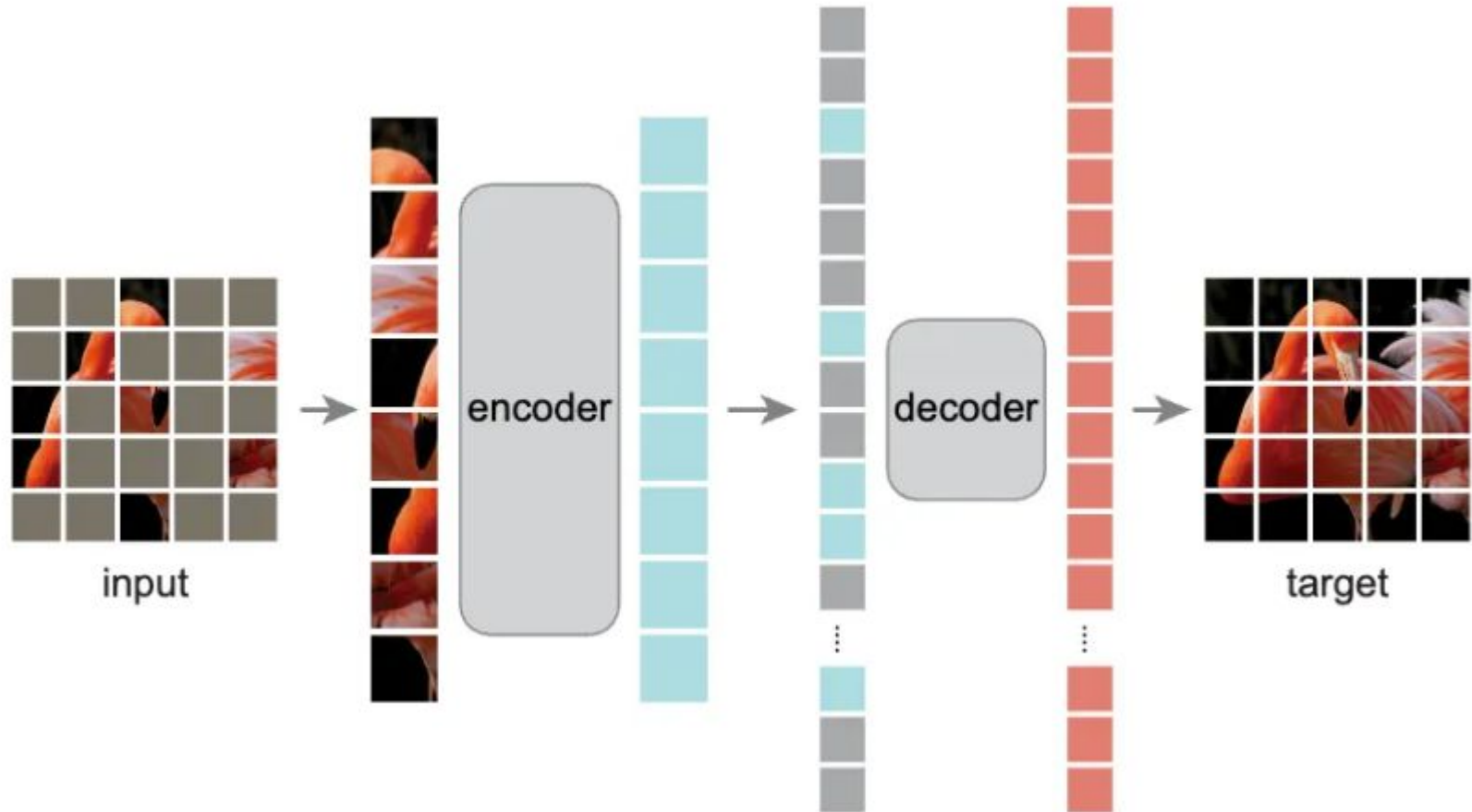
SD with MAE initial latents



ASUKA



MAE

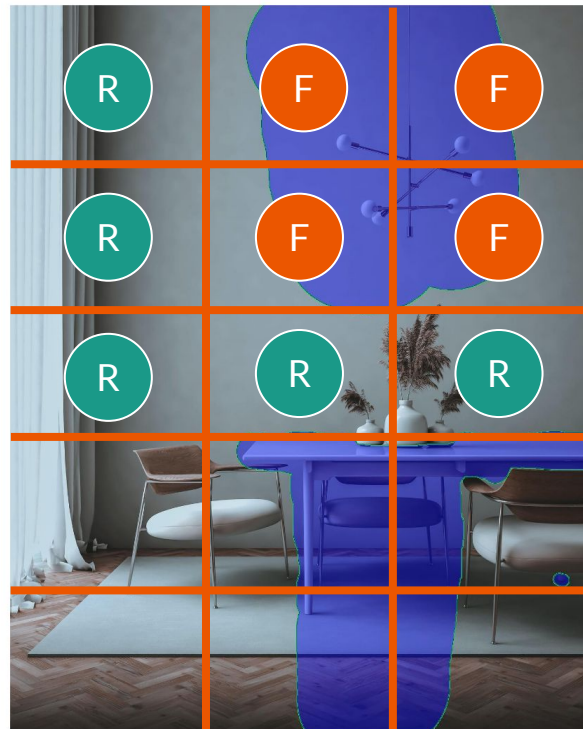


LaMa

Discriminateur

Travaille sur des fragments (patches) de l'image

Papier: Resolution-robust Large Mask Inpainting
with Fourier Convolutions





Roadmap

Implémentation ASUKA

Interface graphique



Implémentation MAE

Version GAN



Sources

- A Review of Image Inpainting Methods Based on Deep Learning (2023, cité 47 fois)
<https://www.mdpi.com/2076-3417/13/20/11189>
- Generative Image Inpainting With Contextual Attention (2018, cité 3262 fois)
<https://arxiv.org/abs/1801.07892v2>
- Resolution-robust Large Mask Inpainting with Fourier Convolutions (2021, cité 1409 fois)
<https://arxiv.org/abs/2109.07161>
- EdgeConnect: Generative Image Inpainting with Adversarial Edge Learning, (2019, cité 1057 fois)
<https://arxiv.org/abs/1901.00212>
- Towards Context-Stable and Visual-Consistent Image Inpainting
<https://arxiv.org/html/2312.04831v2>
- Masked Autoencoders: A Simple Yet Powerful Approach to Self-Supervised Vision Learning
<https://medium.com/@jimcanary/masked-autoencoders-a-simple-yet-powerful-approach-to-self-supervised-vision-learning-0ec9dc849dd2>