



Bienvenue!

**ÉCOLE D'HIVER FRANCOPHONE
EN APPRENTISSAGE PROFOND**

5 - 9 mars 2018



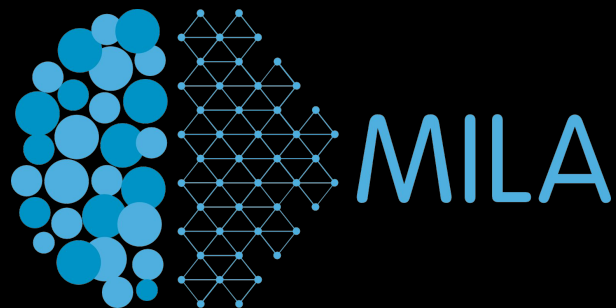
IVADO

HEC Montréal
Polytechnique Montréal
Université de Montréal



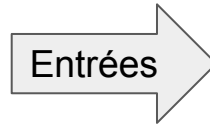
MILA

Institut
des algorithmes
d'apprentissage
de Montréal



Modèles génératifs

Qu'est-ce qu'un Modèle Génératif?



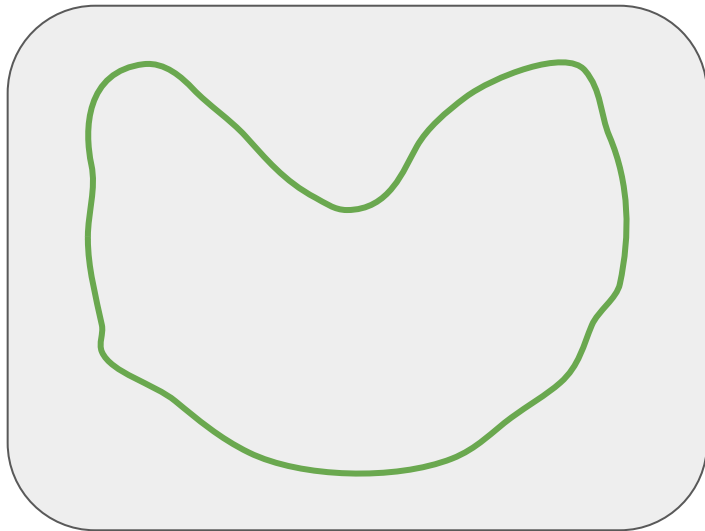
**Modèle
Génératif**

Modèle Génératif

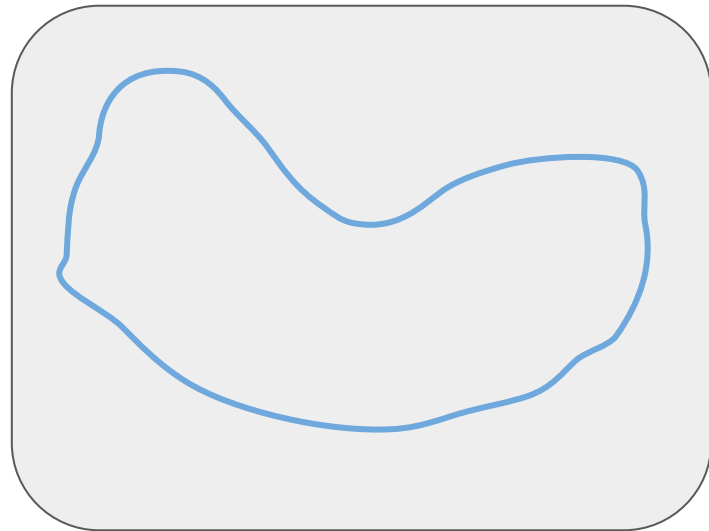
Sorties



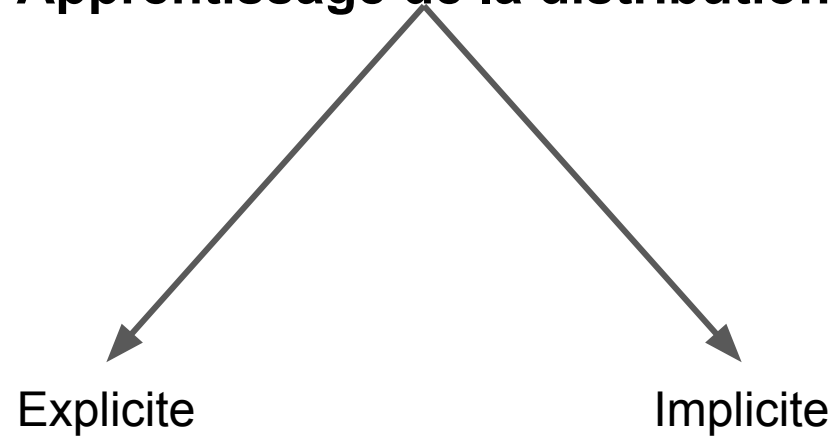
Vraie distribution



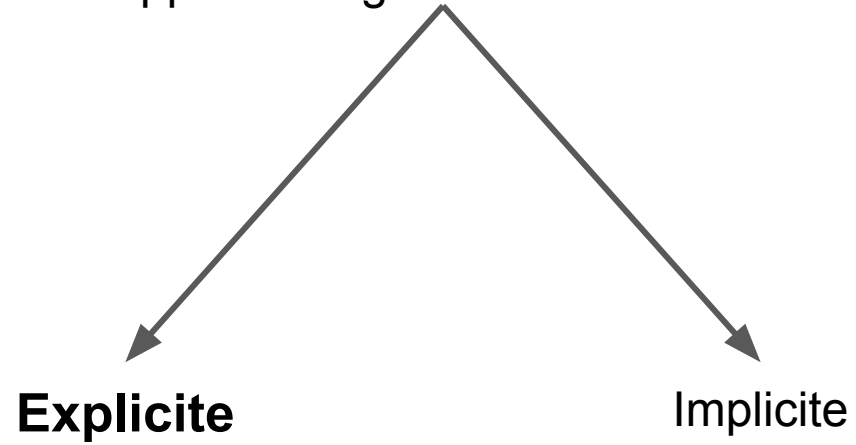
Distribution apprise par le modèle



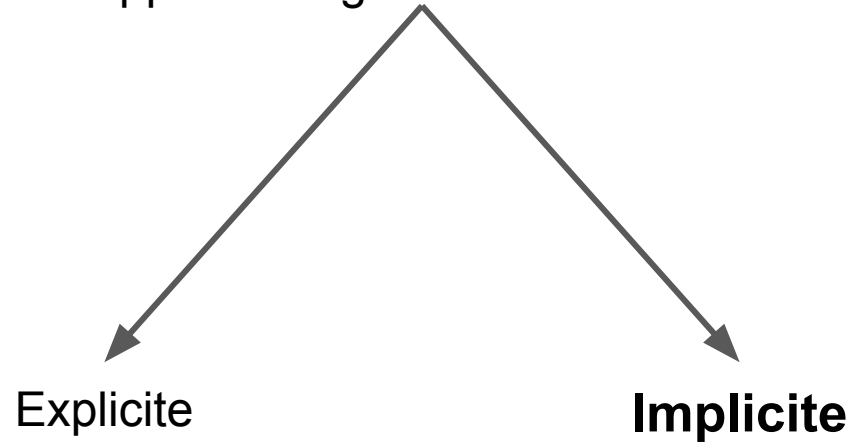
Apprentissage de la distribution



Apprentissage de la distribution



Apprentissage de la distribution



Questions ?

Apprentissage de la distribution

Explicite

Implicite

Tractable

Approximé

*Autoregressive
Models*

*Variational
Autoencoders*

*Generative
Adversarial
Networks*

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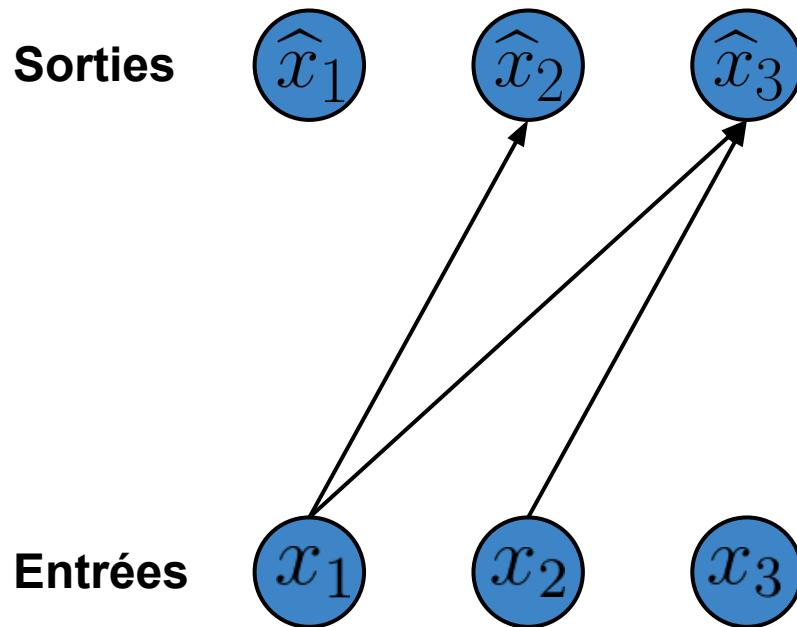
Approximé

***Autoregressive
Models***

*Variational
Autoencoders*

*Generative
Adversarial
Networks*

Fully Visible Sigmoid Belief Network

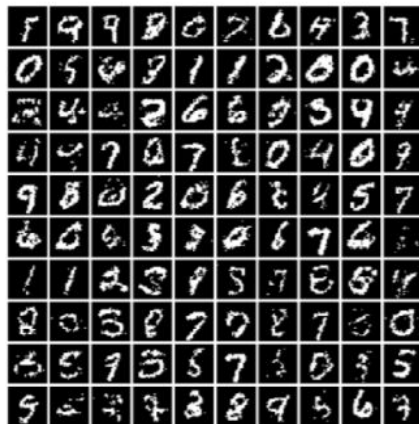


Notable Autoregressive Models



NADE

(Larochelle et al 2011)



MADE

(Germain et al 2016)



PixelCNN

(van den Ord et al 2016)

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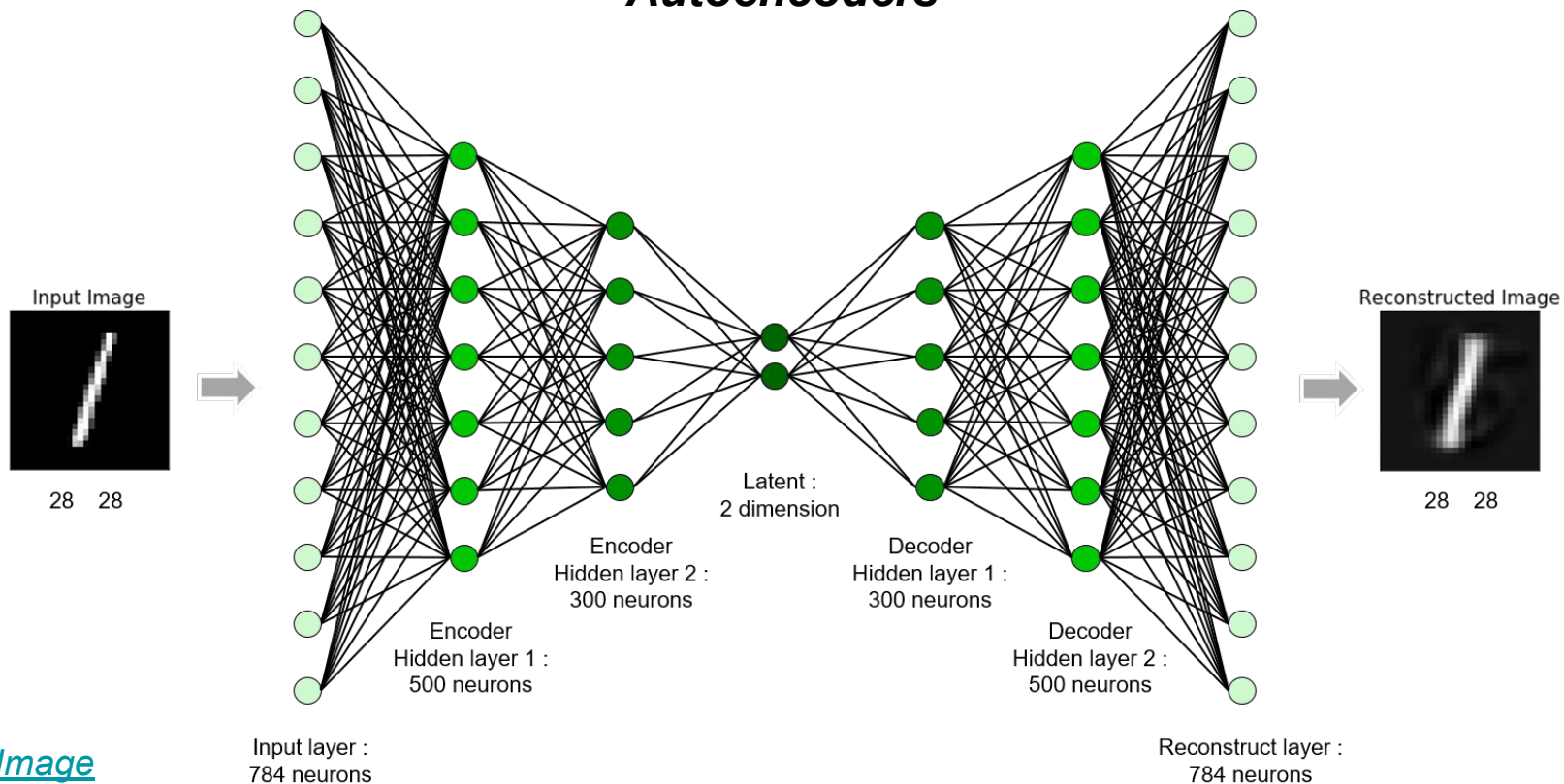
Approximé

*Autoregressive
Models*

***Variational
Autoencoders***

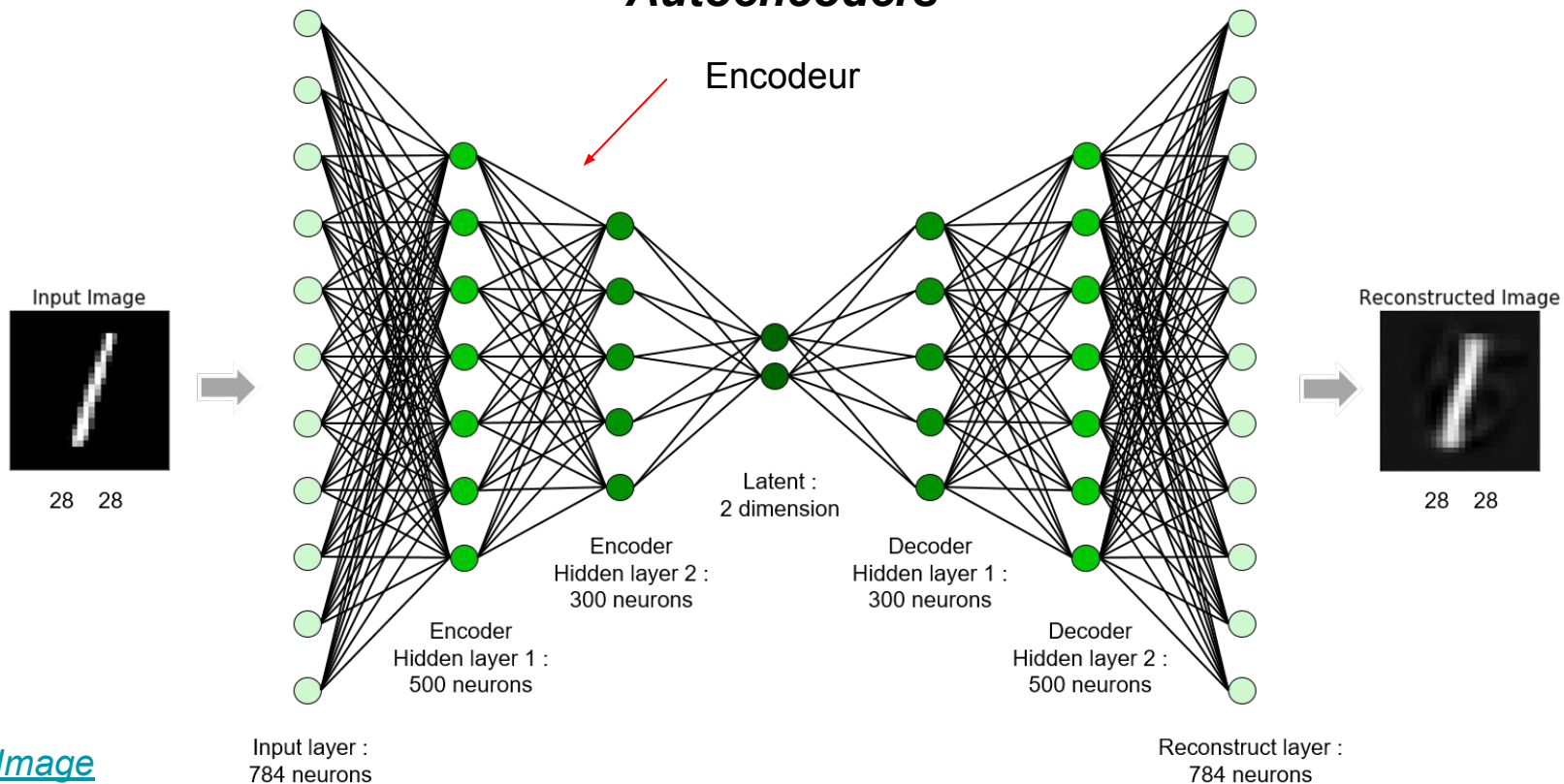
*Generative
Adversarial
Networks*

Autoencoders



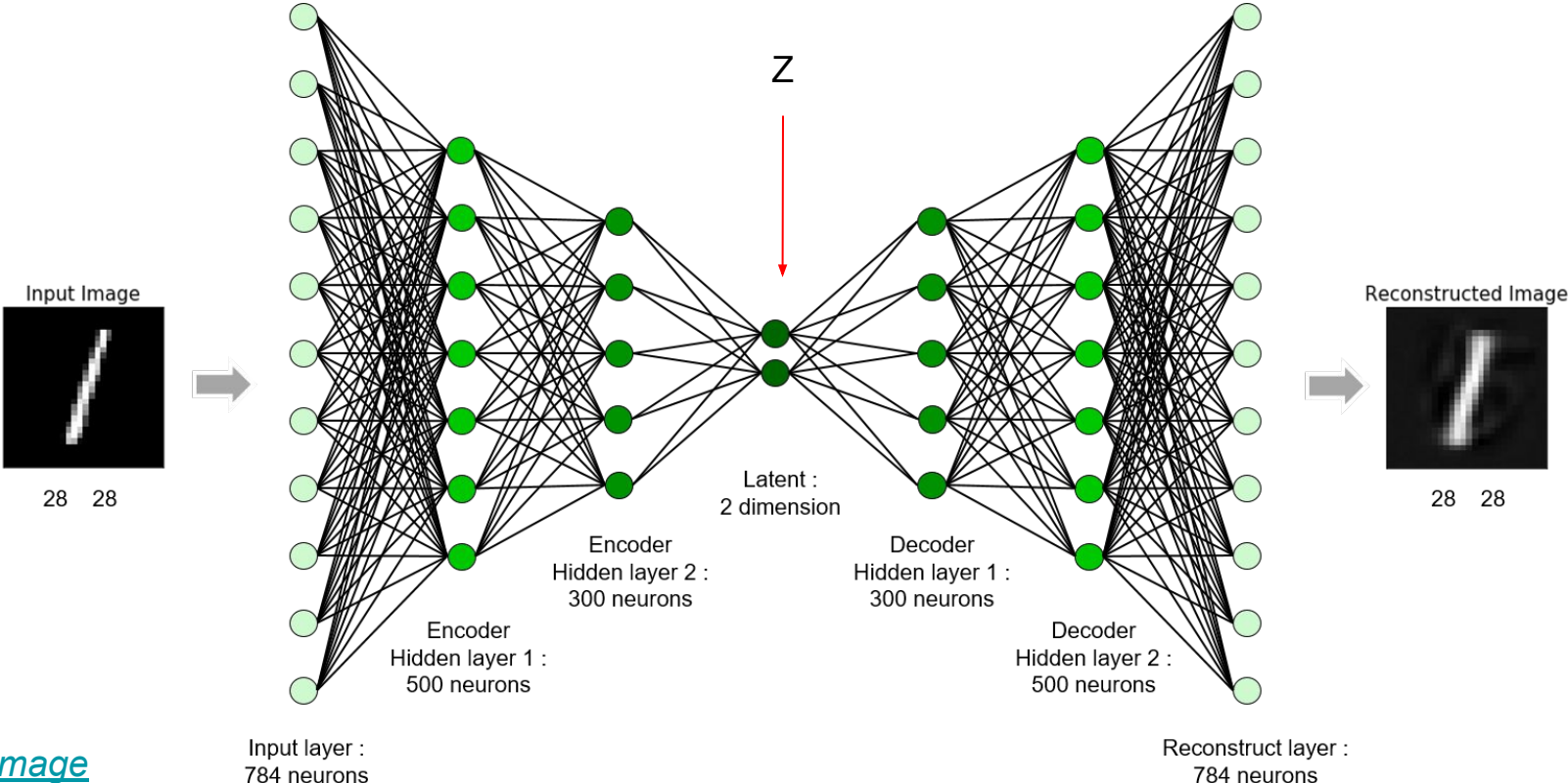
Source Image

Autoencoders



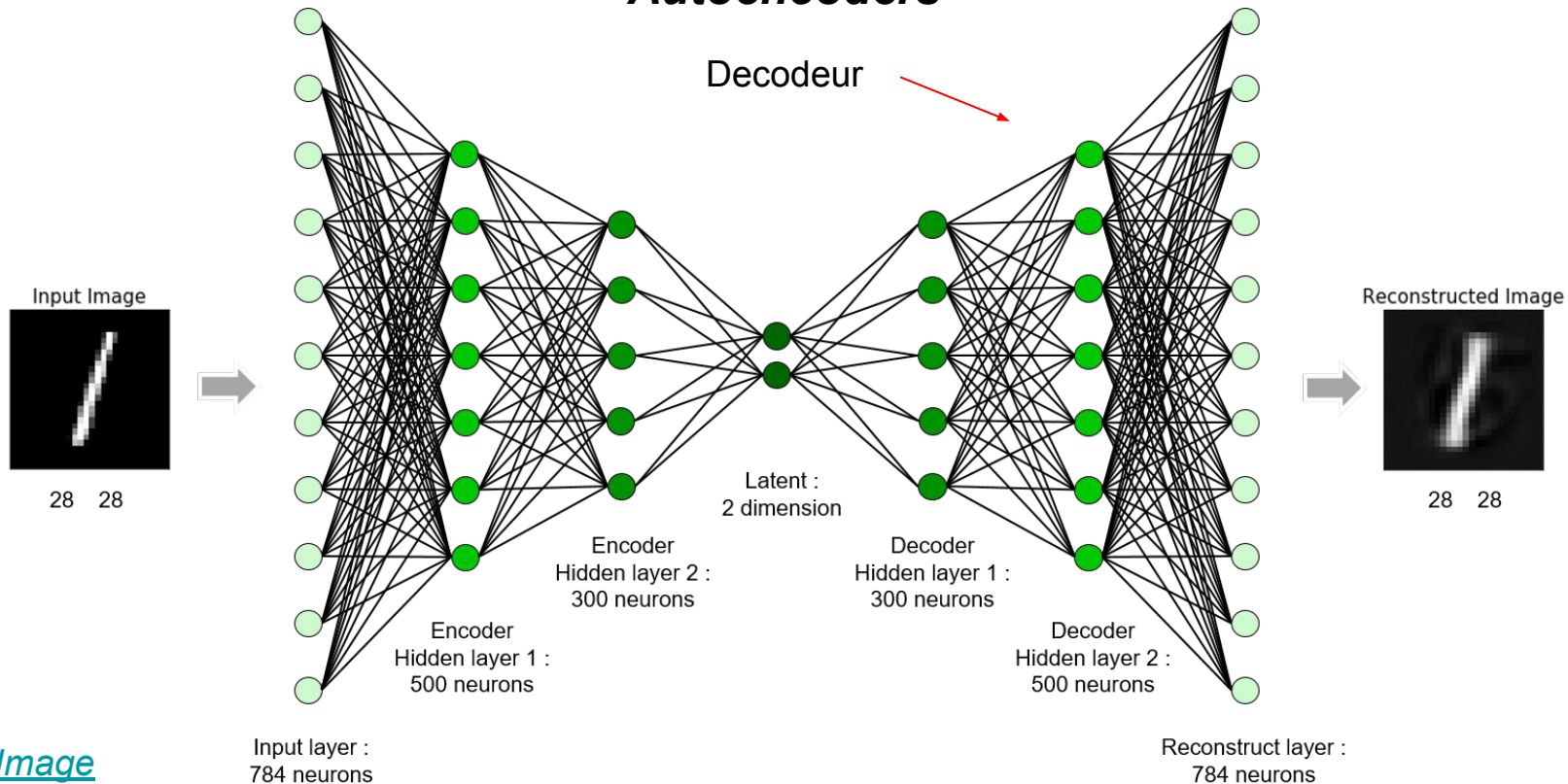
Source Image

Autoencoders



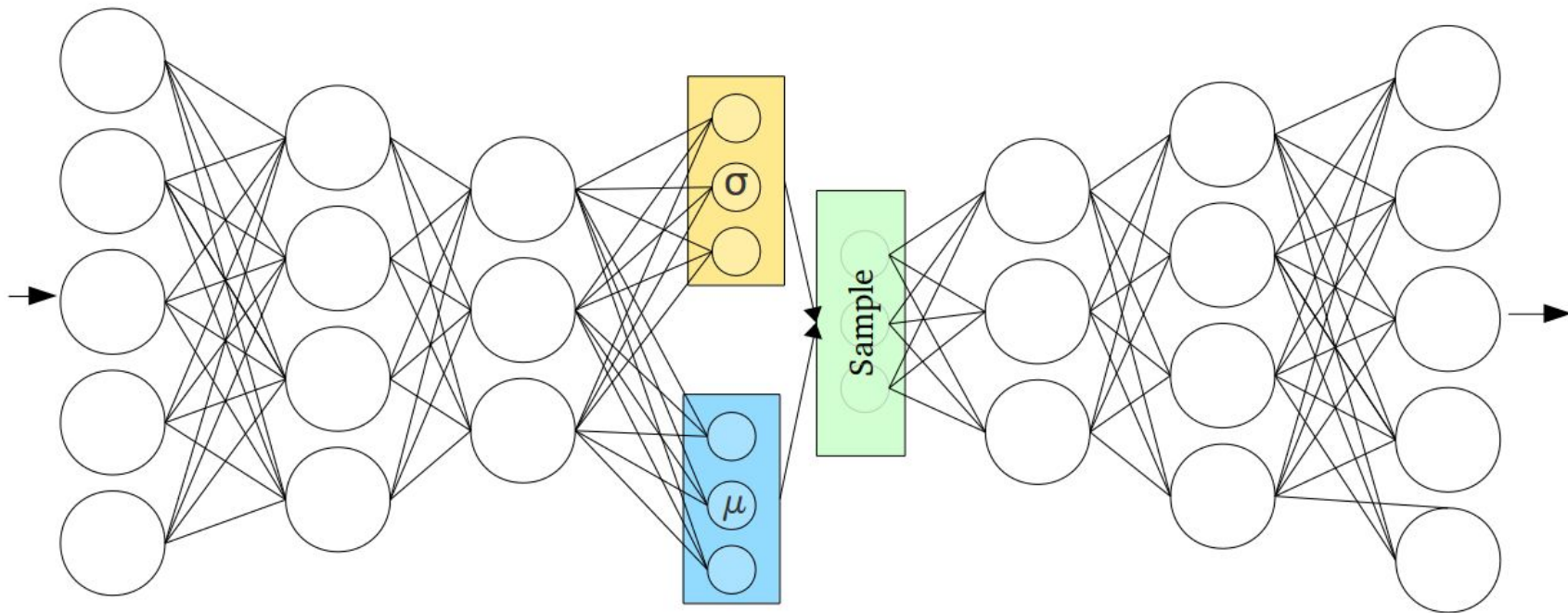
Source Image

Autoencoders



Source Image

Variational Autoencoders



[Source Image](#)

Apprentissage de la distribution

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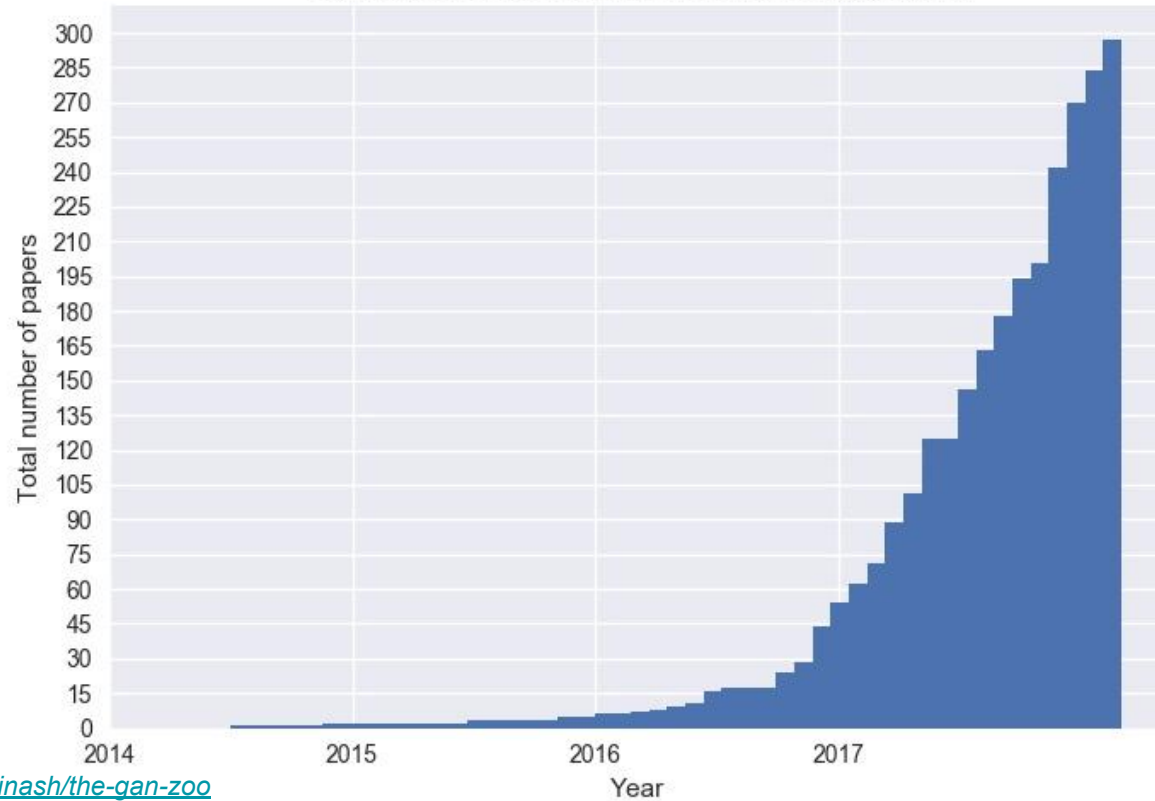
*Autoregressive
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*Variational
Autoencoders*

***Generative
Adversarial
Networks***

Generative Adversarial Networks Explosion

Cumulative number of named GAN papers by month



<https://github.com/hindupuravinash/the-gan-zoo>

GAN ZOO

- * 3D-ED-GAN - [Shape Inpainting using 3D Generative Adversarial Network and Recurrent Convolutional Networks](https://arxiv.org/abs/1711.06375)
- * 3D-GAN - [Learning a Probabilistic Latent Space of Object Shapes via 3D Generative-Adversarial Modeling](https://arxiv.org/abs/1610.07584) ([github](https://github.com/zck119/3dgan-release))
- * 3D-IWGAN - [Improved Adversarial Systems for 3D Object Generation and Reconstruction](https://arxiv.org/abs/1707.09557) ([github](https://github.com/EdwardSmith1884/3D-IWGAN))
- * 3D-RecGAN - [3D Object Reconstruction from a Single Depth View with Adversarial Learning](https://arxiv.org/abs/1708.07969) ([github](https://github.com/Yang7879/3D-RecGAN))
- * ABC-GAN - [ABC-GAN: Adaptive Blur and Control for improved training stability of Generative Adversarial Networks](https://drive.google.com/file/d/0B3wEP_IEl0laVTdGcHE2VnRiMlE/view) ([github](https://github.com/IgorSusmelj/ABC-GAN))
- * ABC-GAN - [GANs for LIFE: Generative Adversarial Networks for Likelihood Free Inference](https://arxiv.org/abs/1711.11139)
- * AC-GAN - [Conditional Image Synthesis With Auxiliary Classifier GANs](https://arxiv.org/abs/1610.09585)
- * acGAN - [Face Aging With Conditional Generative Adversarial Networks](https://arxiv.org/abs/1702.01983)
- * ACTuAL - [ACTuAL: Actor-Critic Under Adversarial Learning](https://arxiv.org/abs/1711.04755)
- * AdaGAN - [AdaGAN: Boosting Generative Models](https://arxiv.org/abs/1701.02386v1)
- * AdvGAN - [Generating adversarial examples with adversarial networks](https://arxiv.org/abs/1801.02610)
- * AE-GAN - [AE-GAN: adversarial eliminating with GAN](https://arxiv.org/abs/1707.05474)
- * AEGAN - [Learning Inverse Mapping by Autoencoder based Generative Adversarial Nets](https://arxiv.org/abs/1703.10094)
- * AffGAN - [Amortised MAP Inference for Image Super-resolution](https://arxiv.org/abs/1610.04490)
- * AL-CGAN - [Learning to Generate Images of Outdoor Scenes from Attributes and Semantic Layouts](https://arxiv.org/abs/1612.00215)
- * ALI - [Adversarially Learned Inference](https://arxiv.org/abs/1606.00704) ([github](https://github.com/IshmaelBelghazi/ALI))
- * AlignGAN - [AlignGAN: Learning to Align Cross-Domain Images with Conditional Generative Adversarial Networks](https://arxiv.org/abs/1707.01400)
- * AM-GAN - [Activation Maximization Generative Adversarial Nets](https://arxiv.org/abs/1703.02000)
- * AnoGAN - [Unsupervised Anomaly Detection with Generative Adversarial Networks to Guide Marker Discovery](https://arxiv.org/abs/1703.05921v1)
- * APE-GAN - [APE-GAN: Adversarial Perturbation Elimination with GAN](https://arxiv.org/abs/1707.05474)
- * ARAE - [Adversarially Regularized Autoencoders for Generating Discrete Structures](https://arxiv.org/abs/1706.04223) ([github](https://github.com/jakezhaobj/ARAE))
- * ARDA - [Adversarial Representation Learning for Domain Adaptation](https://arxiv.org/abs/1707.01217)
- * ARIGAN - [ARIGAN: Synthetic Arabidopsis Plants using Generative Adversarial Network](https://arxiv.org/abs/1709.00938)
- * ArtGAN - [ArtGAN: Artwork Synthesis with Conditional Categorical GANs](https://arxiv.org/abs/1702.03410)
- * AttGAN - [Arbitrary Facial Attribute Editing: Only Change What You Want](https://arxiv.org/abs/1711.10678)
- * AttnGAN - [AttnGAN: Fine-Grained Text to Image Generation with Attentional Generative Adversarial Networks](https://arxiv.org/abs/1711.10485)
- * b-GAN - [Generative Adversarial Nets from a Density Ratio Estimation Perspective](https://arxiv.org/abs/1610.02920)
- * Bayesian GAN - [Deep and Hierarchical Implicit Models](https://arxiv.org/abs/1702.08896) ([github](https://github.com/andrewgordonwilson/bayesgan/))
- * Bayesian GAN - [Bayesian GAN](https://arxiv.org/abs/1705.09558)
- * BCGAN - [Bayesian Conditional Generative Adversarial Networks](https://arxiv.org/abs/1706.05477)
- * BCGAN - [Bidirectional Conditional Generative Adversarial Networks](https://arxiv.org/abs/1711.07461)
- * BEGAN - [BEGAN: Boundary Equilibrium Generative Adversarial Networks](https://arxiv.org/abs/1703.10717)
- * BGAN - [Binary Generative Adversarial Networks for Image Retrieval](https://arxiv.org/abs/1708.04150) ([github](https://github.com/htconquer/BGAN))
- * BicycleGAN - [Toward Multimodal Image-to-Image Translation](https://arxiv.org/abs/1711.11586) ([github](https://github.com/junyanz/BicycleGAN))
- * BIGAN - [Adversarial Feature Learning](https://arxiv.org/abs/1605.09782v7)
- * BS-GAN - [Boundary-Seeking Generative Adversarial Networks](https://arxiv.org/abs/1702.08431v1)
- * C-GAN - [Face Aging with Contextual Generative Adversarial Nets](https://arxiv.org/abs/1802.00237)
- * C-RNN-GAN - [C-RNN-GAN: Continuous recurrent neural networks with adversarial training](https://arxiv.org/abs/1611.09904) ([github](https://github.com/olofmogren/c-rnn-gan/))
- * CA-GAN - [Composition-aided Sketch-realistic Portrait Generation](https://arxiv.org/abs/1712.00899)



GAN ZOO - Suite

- * CaloGAN - [CaloGAN: Simulating 3D High Energy Particle Showers in Multi-Layer Electromagnetic Calorimeters with Generative Adversarial Networks](https://arxiv.org/abs/1705.02355) ([github](https://github.com/hep-lbd/CaloGAN))
- * CAN - [CAN: Creative Adversarial Networks, Generating Art by Learning About Styles and Deviating from Style Norms](https://arxiv.org/abs/1706.07068)
- * CapsuleGAN - [CapsuleGAN: Generative Adversarial Capsule Network](http://arxiv.org/abs/1802.06167)
- * CatGAN - [Unsupervised and Semi-supervised Learning with Categorical Generative Adversarial Networks](https://arxiv.org/abs/1511.06390v2)
- * CatGAN - [CatGAN: Coupled Adversarial Transfer for Domain Generation](https://arxiv.org/abs/1711.08904)
- * CausalGAN - [CausalGAN: Learning Causal Implicit Generative Models with Adversarial Training](https://arxiv.org/abs/1709.02023)
- * CC-GAN - [Semi-Supervised Learning with Context-Conditional Generative Adversarial Networks](https://arxiv.org/abs/1611.06430) ([github](https://github.com/edenton/cc-gan))
- * CDcGAN - [Simultaneously Color-Depth Super-Resolution with Conditional Generative Adversarial Network](https://arxiv.org/abs/1708.09105)
- * CFG-GAN - [Composite Functional Gradient Learning of Generative Adversarial Models](https://arxiv.org/abs/1801.06309)
- * CGAN - [Conditional Generative Adversarial Nets](https://arxiv.org/abs/1411.1784)
- * CGAN - [Controllable Generative Adversarial Network](https://arxiv.org/abs/1708.00598)
- * Chekhov GAN - [An Online Learning Approach to Generative Adversarial Networks](https://arxiv.org/abs/1706.03269)
- * CipherGAN - [Unsupervised Cipher Cracking Using Discrete GANs](https://arxiv.org/abs/1801.04883)
- * CM-GAN - [CM-GANs: Cross-modal Generative Adversarial Networks for Common Representation Learning](https://arxiv.org/abs/1710.05106)
- * CoAtt-GAN - [Are You Talking to Me? Reasoned Visual Dialog Generation through Adversarial Learning](https://arxiv.org/abs/1711.07613)
- * CoGAN - [Coupled Generative Adversarial Networks](https://arxiv.org/abs/1606.07536v2)
- * ComboGAN - [ComboGAN: Unrestrained Scalability for Image Domain Translation](https://arxiv.org/abs/1712.06909) ([github](https://github.com/AAanoosheh/ComboGAN))
- * ConceptGAN - [Learning Compositional Visual Concepts with Mutual Consistency](https://arxiv.org/abs/1711.06148)
- * Conditional cycleGAN - [Conditional CycleGAN for Attribute Guided Face Image Generation](https://arxiv.org/abs/1705.09966)
- * contrast-GAN - [Generative Semantic Manipulation with Contrasting GAN](https://arxiv.org/abs/1708.00315)
- * Context-RNN-GAN - [Contextual RNN-GANs for Abstract Reasoning Diagram Generation](https://arxiv.org/abs/1609.09444)
- * Coulomb GAN - [Coulomb GANs: Provably Optimal Nash Equilibria via Potential Fields](https://arxiv.org/abs/1708.08819)
- * Cover-GAN - [Generative Steganography with Kerckhoffs' Principle based on Generative Adversarial Networks](https://arxiv.org/abs/1711.04916)
- * Cramèr GAN - [The Cramèr Distance as a Solution to Biased Wasserstein Gradients](https://arxiv.org/abs/1705.10743)
- * Cross-GAN - [Crossing Generative Adversarial Networks for Cross-View Person Re-identification](https://arxiv.org/abs/1801.01760)
- * crVAE-GAN - [Channel-Recurrent Variational Autoencoders](https://arxiv.org/abs/1706.03729)
- * CS-GAN - [Improving Neural Machine Translation with Conditional Sequence Generative Adversarial Nets](https://arxiv.org/abs/1703.04887)
- * CVAE-GAN - [CVAE-GAN: Fine-Grained Image Generation through Asymmetric Training](https://arxiv.org/abs/1703.10155)
- * CycleGAN - [Unpaired Image-to-Image Translation using Cycle-Consistent Adversarial Networks](https://arxiv.org/abs/1703.10593) ([github](https://github.com/junyanz/CycleGAN))
- * D-GAN - [Differential Generative Adversarial Networks: Synthesizing Non-linear Facial Variations with Limited Number of Training Data](https://arxiv.org/abs/1711.10267)
- * D2GAN - [Dual Discriminator Generative Adversarial Nets](http://arxiv.org/abs/1709.03831)
- * DA-GAN - [DA-GAN: Instance-level Image Translation by Deep Attention Generative Adversarial Networks (with Supplementary Materials)](http://arxiv.org/abs/1802.06454)
- * DAGAN - [Data Augmentation Generative Adversarial Networks](https://arxiv.org/abs/1711.04340)
- * DAN - [Distributional Adversarial Networks](https://arxiv.org/abs/1706.09549)
- * DCGAN - [Unsupervised Representation Learning with Deep Convolutional Generative Adversarial Networks](https://arxiv.org/abs/1511.06434) ([github](https://github.com/Newmu/dcgan_code))
- * DeblurGAN - [DeblurGAN: Blind Motion Deblurring Using Conditional Adversarial Networks](https://arxiv.org/abs/1711.07064) ([github](https://github.com/KupynOrest/DeblurGAN))
- * Defense-GAN - [Defense-GAN: Protecting Classifiers Against Adversarial Attacks Using Generative Models](https://openreview.net/forum?id=BkJ3ibb0-¬eId=SJwPXJaHG)
- * DeliGAN - [DeLiGAN : Generative Adversarial Networks for Diverse and Limited Data](https://arxiv.org/abs/1706.02071) ([github](https://github.com/val-iisc/deligan))
- * DF-GAN - [Learning Disentangling and Fusing Networks for Face Completion Under Structured Occlusions](https://arxiv.org/abs/1712.04646)



GAN ZOO - Suite 2

- * DiscoGAN - [Learning to Discover Cross-Domain Relations with Generative Adversarial Networks](https://arxiv.org/abs/1703.05192v1)
- * DistanceGAN - [One-Sided Unsupervised Domain Mapping](https://arxiv.org/abs/1706.00826)
- * DM-GAN - [Dual Motion GAN for Future-Flow Embedded Video Prediction](https://arxiv.org/abs/1708.00284)
- * DNA-GAN - [DNA-GAN: Learning Disentangled Representations from Multi-Attribute Images](https://arxiv.org/abs/1711.05415)
- * dp-GAN - [Differentially Private Releasing via Deep Generative Model](https://arxiv.org/abs/1801.01594)
- * DP-GAN - [DP-GAN: Diversity-Promoting Generative Adversarial Network for Generating Informative and Diversified Text](https://arxiv.org/abs/1802.01345)
- * DPGAN - [Differentially Private Generative Adversarial Network http://arxiv.org/abs/1802.06739](-) ([github](None))
- * DR-GAN - [Representation Learning by Rotating Your Faces](https://arxiv.org/abs/1705.11136)
- * DRAGAN - [How to Train Your DRAGAN](https://arxiv.org/abs/1705.07215) ([github](https://github.com/kodalinaveen3/DRAGAN))
- * DRPAN - [Discriminative Region Proposal Adversarial Networks for High-Quality Image-to-Image Translation](https://arxiv.org/abs/1711.09554)
- * DSP-GAN - [Depth Structure Preserving Scene Image Generation](https://arxiv.org/abs/1706.00212)
- * DTN - [Unsupervised Cross-Domain Image Generation](https://arxiv.org/abs/1611.02200)
- * DualGAN - [DualGAN: Unsupervised Dual Learning for Image-to-Image Translation](https://arxiv.org/abs/1704.02510v1)
- * Dualing GAN - [Dualing GANs](https://arxiv.org/abs/1706.06216)
- * Dynamics Transfer GAN - [Dynamics Transfer GAN: Generating Video by Transferring Arbitrary Temporal Dynamics from a Source Video to a Single Target Image](https://arxiv.org/abs/1712.03534)
- * EBGAN - [Energy-based Generative Adversarial Network](https://arxiv.org/abs/1609.03126v4)
- * ecGAN - [eCommerceGAN : A Generative Adversarial Network for E-commerce](https://arxiv.org/abs/1801.03244)
- * ED//GAN - [Stabilizing Training of Generative Adversarial Networks through Regularization](https://arxiv.org/abs/1705.09367)
- * EGAN - [Enhanced Experience Replay Generation for Efficient Reinforcement Learning](https://arxiv.org/abs/1705.08245)
- * EnergyWGAN - [Energy-relaxed Wassertein GANs (EnergyWGAN): Towards More Stable and High Resolution Image Generation](https://arxiv.org/abs/1712.01026)
- * ExGAN - [Eye In-Painting with Exemplar Generative Adversarial Networks](https://arxiv.org/abs/1712.03999)
- * ExposureGAN - [Exposure: A White-Box Photo Post-Processing Framework](https://arxiv.org/abs/1709.09602) ([github](https://github.com/yuanming-hu/exposure))
- * ExprGAN - [ExprGAN: Facial Expression Editing with Controllable Expression Intensity](https://arxiv.org/abs/1709.03842)
- * f-CLSWGAN - [Feature Generating Networks for Zero-Shot Learning](https://arxiv.org/abs/1712.00981)
- * f-GAN - [f-GAN: Training Generative Neural Samplers using Variational Divergence Minimization](https://arxiv.org/abs/1606.00709)
- * FF-GAN - [Towards Large-Pose Face Frontalization in the Wild](https://arxiv.org/abs/1704.06244)
- * FIGAN - [Frame Interpolation with Multi-Scale Deep Loss Functions and Generative Adversarial Networks](https://arxiv.org/abs/1711.06045)
- * Fila-GAN - [Synthesizing Filamentary Structured Images with GANs](https://arxiv.org/abs/1706.02185)
- * First Order GAN - [First Order Generative Adversarial Networks](https://arxiv.org/abs/1802.04591)
- * Fisher GAN - [Fisher GAN](https://arxiv.org/abs/1705.09675)
- * Flow-GAN - [Flow-GAN: Bridging implicit and prescribed learning in generative models](https://arxiv.org/abs/1705.08868)
- * FSEGAN - [Exploring Speech Enhancement with Generative Adversarial Networks for Robust Speech Recognition](https://arxiv.org/abs/1711.05747)
- * FTGAN - [Hierarchical Video Generation from Orthogonal Information: Optical Flow and Texture](https://arxiv.org/abs/1711.09618)
- * FusedGAN - [Semi-supervised FusedGAN for Conditional Image Generation](https://arxiv.org/abs/1801.05551)
- * FusionGAN - [Learning to Fuse Music Genres with Generative Adversarial Dual Learning](https://arxiv.org/abs/1712.01456)
- * G2-GAN - [Geometry Guided Adversarial Facial Expression Synthesis](https://arxiv.org/abs/1712.03474)
- * GAGAN - [GAGAN: Geometry-Aware Generative Adversarial Networks](https://arxiv.org/abs/1712.00684)
- * GAMN - [Generative Adversarial Mapping Networks](https://arxiv.org/abs/1709.09820)
- * GAN - [Generative Adversarial Networks](https://arxiv.org/abs/1406.2661) ([github](https://github.com/goodfeli/adversarial))
- * GAN-ATV - [A Novel Approach to Artistic Textual Visualization via GAN](https://arxiv.org/abs/1710.10553)



GAN ZOO - Suite 3

- * GAN-CLS - [Generative Adversarial Text to Image Synthesis](https://arxiv.org/abs/1605.05396) ([github](https://github.com/reedscot/icml2016))
- * GAN-RS - [Towards Qualitative Advancement of Underwater Machine Vision with Generative Adversarial Networks](https://arxiv.org/abs/1712.00736)
- * GAN-sep - [GANs for Biological Image Synthesis](https://arxiv.org/abs/1708.04692) ([github](https://github.com/aosokin/biogans))
- * GAN-VFS - [Generative Adversarial Network-based Synthesis of Visible Faces from Polarimetric Thermal Faces](https://arxiv.org/abs/1708.02681)
- * GANCS - [Deep Generative Adversarial Networks for Compressed Sensing Automates MRI](https://arxiv.org/abs/1706.00051)
- * GANDI - [Guiding the search in continuous state-action spaces by learning an action sampling distribution from off-target samples](https://arxiv.org/abs/1711.01391)
- * GANG - [GANs: Generative Adversarial Network Games](https://arxiv.org/abs/1712.00679)
- * GANosaic - [GANosaic: Mosaic Creation with Generative Texture Manifolds](https://arxiv.org/abs/1712.00269)
- * GAP - [Context-Aware Generative Adversarial Privacy](https://arxiv.org/abs/1710.09549)
- * GAWWN - [Learning What and Where to Draw](https://arxiv.org/abs/1610.02454) ([github](https://github.com/reedscot/nips2016))
- * GC-GAN - [Geometry-Contrastive Generative Adversarial Network for Facial Expression Synthesis](https://arxiv.org/abs/1802.01822)
- * GeneGAN - [GeneGAN: Learning Object Transfiguration and Attribute Subspace from Unpaired Data](https://arxiv.org/abs/1705.04932) ([github](https://github.com/Prinsphield/GeneGAN))
- * GeoGAN - [Generating Instance Segmentation Annotation by Geometry-guided GAN](https://arxiv.org/abs/1801.08839)
- * Geometric GAN - [Geometric GAN](https://arxiv.org/abs/1705.02894)
- * GLCA-GAN - [Global and Local Consistent Age Generative Adversarial Networks](https://arxiv.org/abs/1801.08390)
- * GMAN - [Generative Multi-Adversarial Networks](http://arxiv.org/abs/1611.01673)
- * GMM-GAN - [Towards Understanding the Dynamics of Generative Adversarial Networks](https://arxiv.org/abs/1706.09884)
- * GoGAN - [Gang of GANs: Generative Adversarial Networks with Maximum Margin Ranking](https://arxiv.org/abs/1704.04865)
- * GP-GAN - [GP-GAN: Towards Realistic High-Resolution Image Blending](https://arxiv.org/abs/1703.07195) ([github](https://github.com/wuhuikai/GP-GAN))
- * GP-GAN - [GP-GAN: Gender Preserving GAN for Synthesizing Faces from Landmarks](https://arxiv.org/abs/1710.00962)
- * GPU - [A generative adversarial framework for positive-unlabeled classification](https://arxiv.org/abs/1711.08054)
- * GRAN - [Generating images with recurrent adversarial networks](https://arxiv.org/abs/1602.05110) ([github](https://github.com/jiwongim/GRAN))
- * GraspGAN - [Using Simulation and Domain Adaptation to Improve Efficiency of Deep Robotic Grasping](https://arxiv.org/abs/1709.07857)
- * HAN - [Chinese Typeface Transformation with Hierarchical Adversarial Network](https://arxiv.org/abs/1711.06448)
- * HP-GAN - [HP-GAN: Probabilistic 3D human motion prediction via GAN](https://arxiv.org/abs/1711.09561)
- * HR-DCCGAN - [High-Resolution Deep Convolutional Generative Adversarial Networks](https://arxiv.org/abs/1711.06491)
- * IAN - [Neural Photo Editing with Introspective Adversarial Networks](https://arxiv.org/abs/1609.07093) ([github](https://github.com/ajbrock/Neural-Photo-Editor))
- * IcGAN - [Invertible Conditional GANs for image editing](https://arxiv.org/abs/1611.06355) ([github](https://github.com/Guim3/IcGAN))
- * ID-CGAN - [Image De-raining Using a Conditional Generative Adversarial Network](https://arxiv.org/abs/1701.05957v3)
- * IdCycleGAN - [Face Translation between Images and Videos using Identity-aware CycleGAN](https://arxiv.org/abs/1712.00971)
- * IfcVAEGAN - [Conditional Autoencoders with Adversarial Information Factorization](https://arxiv.org/abs/1711.05175)
- * iGAN - [Generative Visual Manipulation on the Natural Image Manifold](https://arxiv.org/abs/1609.03552v2) ([github](https://github.com/junyanz/iGAN))
- * Improved GAN - [Improved Techniques for Training GANs](https://arxiv.org/abs/1606.03498) ([github](https://github.com/openai/improved-gan))
- * In2I - [In2I: Unsupervised Multi-Image-to-Image Translation Using Generative Adversarial Networks](https://arxiv.org/abs/1711.09334)
- * InfoGAN - [InfoGAN: Interpretable Representation Learning by Information Maximizing Generative Adversarial Nets](https://arxiv.org/abs/1606.03657v1) ([github](https://github.com/openai/InfoGAN))
- * IRGAN - [IRGAN: A Minimax Game for Unifying Generative and Discriminative Information Retrieval models](https://arxiv.org/abs/1705.10513v1)
- * Iterative-GAN - [Two Birds with One Stone: Iteratively Learn Facial Attributes with GANs](https://arxiv.org/abs/1711.06078) ([github](https://github.com/punkcure/Iterative-GAN))
- * IVE-GAN - [Invariant Encoding Generative Adversarial Networks](https://arxiv.org/abs/1711.08646)
- * iVGAN - [Towards an Understanding of Our World by GANing Videos in the Wild](https://arxiv.org/abs/1711.11453) ([github](https://github.com/bernhard2202/improved-video-gan))
- * IWGAN - [On Unifying Deep Generative Models](https://arxiv.org/abs/1706.00550)



GAN ZOO - Suite 4

- * KBGAN - [KBGAN: Adversarial Learning for Knowledge Graph Embeddings](https://arxiv.org/abs/1711.04071)
- * KGAN - [KGAN: How to Break The Minimax Game in GAN](https://arxiv.org/abs/1711.01744)
- * I-GAN - [Representation Learning and Adversarial Generation of 3D Point Clouds](https://arxiv.org/abs/1707.02392)
- * LAC-GAN - [Grounded Language Understanding for Manipulation Instructions Using GAN-Based Classification](https://arxiv.org/abs/1801.05096)
- * LAGAN - [Learning Particle Physics by Example: Location-Aware Generative Adversarial Networks for Physics Synthesis](https://arxiv.org/abs/1701.05927)
- * LAPGAN - [Deep Generative Image Models using a Laplacian Pyramid of Adversarial Networks](https://arxiv.org/abs/1506.05751) ([github](https://github.com/facebook/eyescream))
- * LB-GAN - [Load Balanced GANs for Multi-view Face Image Synthesis](http://arxiv.org/abs/1802.07447)
- * LD-GAN - [Linear Discriminant Generative Adversarial Networks](https://arxiv.org/abs/1707.07831)
- * LDAN - [Label Denoising Adversarial Network (LDAN) for Inverse Lighting of Face Images](https://arxiv.org/abs/1709.01993)
- * LeakGAN - [Long Text Generation via Adversarial Training with Leaked Information](https://arxiv.org/abs/1709.08624)
- * LeGAN - [Likelihood Estimation for Generative Adversarial Networks](https://arxiv.org/abs/1707.07530)
- * LGAN - [Global versus Localized Generative Adversarial Nets](https://arxiv.org/abs/1711.06020)
- * LR-GAN - [LR-GAN: Layered Recursive Generative Adversarial Networks for Image Generation](https://arxiv.org/abs/1703.01560v1)
- * LS-GAN - [Loss-Sensitive Generative Adversarial Networks on Lipschitz Densities](https://arxiv.org/abs/1701.06264)
- * LSGAN - [Least Squares Generative Adversarial Networks](https://arxiv.org/abs/1611.04076v3)
- * MAD-GAN - [Multi-Agent Diverse Generative Adversarial Networks](https://arxiv.org/abs/1704.02906)
- * MAGAN - [MAGAN: Margin Adaptation for Generative Adversarial Networks](https://arxiv.org/abs/1704.03817v1)
- * MalGAN - [Generating Adversarial Malware Examples for Black-Box Attacks Based on GAN](https://arxiv.org/abs/1702.05983v1)
- * MaliGAN - [Maximum-Likelihood Augmented Discrete Generative Adversarial Networks](https://arxiv.org/abs/1702.07983)
- * manifold-WGAN - [Manifold-valued Image Generation with Wasserstein Adversarial Networks](https://arxiv.org/abs/1712.01551)
- * MARTA-GAN - [Deep Unsupervised Representation Learning for Remote Sensing Images](https://arxiv.org/abs/1612.08879)
- * MaskGAN - [MaskGAN: Better Text Generation via Filling in the _____](https://arxiv.org/abs/1801.07736)
- * MC-GAN - [Multi-Content GAN for Few-Shot Font Style Transfer](https://arxiv.org/abs/1712.00516) ([github](https://github.com/azadis/MC-GAN))
- * McGAN - [McGAN: Mean and Covariance Feature Matching GAN](https://arxiv.org/abs/1702.08398v1)
- * MD-GAN - [Learning to Generate Time-Lapse Videos Using Multi-Stage Dynamic Generative Adversarial Networks](https://arxiv.org/abs/1709.07592)
- * MDGAN - [Mode Regularized Generative Adversarial Networks](https://arxiv.org/abs/1612.02136)
- * MedGAN - [Generating Multi-label Discrete Electronic Health Records using Generative Adversarial Networks](https://arxiv.org/abs/1703.06490v1)
- * MGAN - [Precomputed Real-Time Texture Synthesis with Markovian Generative Adversarial Networks](https://arxiv.org/abs/1604.04382) ([github](https://github.com/chuanli11/MGANs))
- * MGGAN - [Multi-Generator Generative Adversarial Nets](https://arxiv.org/abs/1708.02556)
- * MIL-GAN - [Multimodal Storytelling via Generative Adversarial Imitation Learning](https://arxiv.org/abs/1712.01455)
- * MIX+GAN - [Generalization and Equilibrium in Generative Adversarial Nets (GANs)](https://arxiv.org/abs/1703.00573v3)
- * MLGAN - [Metric Learning-based Generative Adversarial Network](https://arxiv.org/abs/1711.02792)
- * MMD-GAN - [MMD GAN: Towards Deeper Matching Network](https://arxiv.org/abs/1705.08584) ([github](https://github.com/dougalsutherland/opt-mmd))
- * MMGAN - [MMGAN: Manifold Matching Generative Adversarial Network for Generating Images](https://arxiv.org/abs/1707.08273)
- * MoCoGAN - [MoCoGAN: Decomposing Motion and Content for Video Generation](https://arxiv.org/abs/1707.04993) ([github](https://github.com/sergeytulyakov/mocogan))
- * MPM-GAN - [Message Passing Multi-Agent GANs](https://arxiv.org/abs/1612.01294)
- * MS-GAN - [Temporal Coherency based Criteria for Predicting Video Frames using Deep Multi-stage Generative Adversarial Networks](http://papers.nips.cc/paper/7014-temporal-coherency-based-criteria-for-predicting-video-frames-using-deep-multi-stage-generative-adversarial-networks)
- * MuseGAN - [MuseGAN: Symbolic-domain Music Generation and Accompaniment with Multi-track Sequential Generative Adversarial Networks](https://arxiv.org/abs/1709.06298)
- * MV-BiGAN - [Multi-view Generative Adversarial Networks](https://arxiv.org/abs/1611.02019v1)



GAN ZOO - Suite 5

- * OptionGAN - [OptionGAN: Learning Joint Reward-Policy Options using Generative Adversarial Inverse Reinforcement Learning](https://arxiv.org/abs/1709.06683)
- * ORGAN - [Objective-Reinforced Generative Adversarial Networks (ORGAN) for Sequence Generation Models](https://arxiv.org/abs/1705.10843)
- * ORGAN - [3D Reconstruction of Incomplete Archaeological Objects Using a Generative Adversary Network](https://arxiv.org/abs/1711.06363)
- * PacGAN - [PacGAN: The power of two samples in generative adversarial networks](https://arxiv.org/abs/1712.04086)
- * PAN - [Perceptual Adversarial Networks for Image-to-Image Transformation](https://arxiv.org/abs/1706.09138)
- * PassGAN - [PassGAN: A Deep Learning Approach for Password Guessing](https://arxiv.org/abs/1709.00440)
- * Perceptual GAN - [Perceptual Generative Adversarial Networks for Small Object Detection](https://arxiv.org/abs/1706.05274)
- * PGAN - [Probabilistic Generative Adversarial Networks](https://arxiv.org/abs/1708.01886)
- * Pip-GAN - [Pipeline Generative Adversarial Networks for Facial Images Generation with Multiple Attributes](https://arxiv.org/abs/1711.10742)
- * pix2pix - [Image-to-Image Translation with Conditional Adversarial Networks](https://arxiv.org/abs/1611.07004) ([github](https://github.com/phillipi/pix2pix))
- * PixelGAN - [PixelGAN Autoencoders](https://arxiv.org/abs/1706.00531)
- * PN-GAN - [Pose-Normalized Image Generation for Person Re-identification](https://arxiv.org/abs/1712.02225)
- * Pose-GAN - [The Pose Knows: Video Forecasting by Generating Pose Futures](https://arxiv.org/abs/1705.00053)
- * PPGN - [Plug & Play Generative Networks: Conditional Iterative Generation of Images in Latent Space](https://arxiv.org/abs/1612.00005)
- * PrGAN - [3D Shape Induction from 2D Views of Multiple Objects](https://arxiv.org/abs/1612.05872)
- * PSGAN - [Learning Texture Manifolds with the Periodic Spatial GAN](http://arxiv.org/abs/1705.06566)
- * PS*-GAN - [High-Quality Facial Photo-Sketch Synthesis Using Multi-Adversarial Networks](https://arxiv.org/abs/1710.10182)
- * RadialGAN - [RadialGAN: Leveraging multiple datasets to improve target-specific predictive models using Generative Adversarial Networks](http://arxiv.org/abs/1802.06403)
- * RAN - [RAN4QA: Restorative Adversarial Nets for No-Reference Image Quality Assessment](https://arxiv.org/abs/1712.05444) ([github]())
- * RankGAN - [Adversarial Ranking for Language Generation](https://arxiv.org/abs/1705.11001)
- * RCGAN - [Real-valued (Medical) Time Series Generation with Recurrent Conditional GANs](https://arxiv.org/abs/1706.02633)
- * RefineGAN - [Compressed Sensing MRI Reconstruction with Cyclic Loss in Generative Adversarial Networks](https://arxiv.org/abs/1709.00753)
- * RenderGAN - [RenderGAN: Generating Realistic Labeled Data](https://arxiv.org/abs/1611.01331)
- * ResGAN - [Generative Adversarial Network based on Resnet for Conditional Image Restoration](https://arxiv.org/abs/1707.04881)
- * RNN-WGAN - [Language Generation with Recurrent Generative Adversarial Networks without Pre-training](https://arxiv.org/abs/1706.01399) ([github](https://github.com/amirbar/rnn.wgan))
- * RPGAN - [Stabilizing GAN Training with Multiple Random Projections](https://arxiv.org/abs/1705.07831) ([github](https://github.com/ayanc/rpgan))
- * RTT-GAN - [Recurrent Topic-Transition GAN for Visual Paragraph Generation](https://arxiv.org/abs/1703.07022v2)
- * RWGAN - [Relaxed Wasserstein with Applications to GANs](https://arxiv.org/abs/1705.07164)
- * SAD-GAN - [SAD-GAN: Synthetic Autonomous Driving using Generative Adversarial Networks](https://arxiv.org/abs/1611.08788v1)
- * SalGAN - [SalGAN: Visual Saliency Prediction with Generative Adversarial Networks](https://arxiv.org/abs/1701.01081) ([github](https://github.com/imatge-upc/saliency-salgan-2017))
- * SBADA-GAN - [From source to target and back: symmetric bi-directional adaptive GAN](https://arxiv.org/abs/1705.08824)
- * SCH-GAN - [SCH-GAN: Semi-supervised Cross-modal Hashing by Generative Adversarial Network](https://arxiv.org/abs/1802.02488)
- * SD-GAN - [Semantically Decomposing the Latent Spaces of Generative Adversarial Networks](https://arxiv.org/abs/1705.07904)
- * SEGAN - [SEGAN: Speech Enhancement Generative Adversarial Network](https://arxiv.org/abs/1703.09452v1)
- * SeGAN - [SeGAN: Segmenting and Generating the Invisible](https://arxiv.org/abs/1703.10239)
- * SegAN - [SegAN: Adversarial Network with Multi-scale L1 Loss for Medical Image Segmentation](https://arxiv.org/abs/1706.01805)
- * SeqGAN - [SeqGAN: Sequence Generative Adversarial Nets with Policy Gradient](https://arxiv.org/abs/1609.05473v5) ([github](https://github.com/LantaoYu/SeqGAN))
- * SG-GAN - [Semantic-aware Grad-GAN for Virtual-to-Real Urban Scene Adaption](https://arxiv.org/abs/1801.01726) ([github](https://github.com/Peilun-Li/SG-GAN))
- * SGAN - [Texture Synthesis with Spatial Generative Adversarial Networks](https://arxiv.org/abs/1611.08207)
- * SGAN - [Stacked Generative Adversarial Networks](https://arxiv.org/abs/1612.04357v4) ([github](https://github.com/xunhuang1995/SGAN))



GAN ZOO - Suite 6

- * SGAN - [Steganographic Generative Adversarial Networks](https://arxiv.org/abs/1703.05502)
- * SGAN - [SGAN: An Alternative Training of Generative Adversarial Networks](https://arxiv.org/abs/1712.02330)
- * SimGAN - [Learning from Simulated and Unsupervised Images through Adversarial Training](https://arxiv.org/abs/1612.07828)
- * SisGAN - [Semantic Image Synthesis via Adversarial Learning](https://arxiv.org/abs/1707.06873)
- * SketchGAN - [Adversarial Training For Sketch Retrieval](https://arxiv.org/abs/1607.02748)
- * SketchyGAN - [SketchyGAN: Towards Diverse and Realistic Sketch to Image Synthesis](https://arxiv.org/abs/1801.02753)
- * SL-GAN - [Semi-Latent GAN: Learning to generate and modify facial images from attributes](https://arxiv.org/abs/1704.02166)
- * SN-GAN - [Spectral Normalization for Generative Adversarial Networks](https://drive.google.com/file/d/0B8HZ50DPgR3eSVV6YIF3XzQxSjQ/view) ([github](https://github.com/pfnet-research/chainer-gan-lib))
- * Sobolev GAN - [Sobolev GAN](https://arxiv.org/abs/1711.04894)
- * Softmax GAN - [Softmax GAN](https://arxiv.org/abs/1704.06191)
- * Splitting GAN - [Class-Splitting Generative Adversarial Networks](https://arxiv.org/abs/1709.07359)
- * SRGAN - [Photo-Realistic Single Image Super-Resolution Using a Generative Adversarial Network](https://arxiv.org/abs/1609.04802)
- * SRPGAN - [SRPGAN: Perceptual Generative Adversarial Network for Single Image Super Resolution](https://arxiv.org/abs/1712.05927)
- * SS-GAN - [Semi-supervised Conditional GANs](https://arxiv.org/abs/1708.05789)
- * ss-InfoGAN - [Guiding InfoGAN with Semi-Supervision](https://arxiv.org/abs/1707.04487)
- * SSGAN - [SSGAN: Secure Steganography Based on Generative Adversarial Networks](https://arxiv.org/abs/1707.01613)
- * SSL-GAN - [Semi-Supervised Learning with Context-Conditional Generative Adversarial Networks](https://arxiv.org/abs/1611.06430v1)
- * ST-CGAN - [Stacked Conditional Generative Adversarial Networks for Jointly Learning Shadow Detection and Shadow Removal](https://arxiv.org/abs/1712.02478)
- * ST-GAN - [Style Transfer Generative Adversarial Networks: Learning to Play Chess Differently](https://arxiv.org/abs/1702.06762)
- * StackGAN - [StackGAN: Text to Photo-realistic Image Synthesis with Stacked Generative Adversarial Networks](https://arxiv.org/abs/1612.03242v1)
- * StarGAN - [StarGAN: Unified Generative Adversarial Networks for Multi-Domain Image-to-Image Translation](https://arxiv.org/abs/1711.09020) ([github](https://github.com/yunjey/StarGAN))
- * SteinGAN - [Learning Deep Energy Models: Contrastive Divergence vs. Amortized MLE](https://arxiv.org/abs/1707.00797)
- * SVSGAN - [SVSGAN: Singing Voice Separation via Generative Adversarial Network](https://arxiv.org/abs/1710.11428)
- * S²GAN - [Generative Image Modeling using Style and Structure Adversarial Networks](https://arxiv.org/abs/1603.05631v2)
- * TAC-GAN - [TAC-GAN - Text Conditioned Auxiliary Classifier Generative Adversarial Network](https://arxiv.org/abs/1703.06412v2) ([github](https://github.com/dashayushman/TAC-GAN))
- * TAN - [Outline Colorization through Tandem Adversarial Networks](https://arxiv.org/abs/1704.08834)
- * textGAN - [Generating Text via Adversarial Training](https://zhegan27.github.io/Papers/textGAN_nips2016_workshop.pdf)
- * TextureGAN - [TextureGAN: Controlling Deep Image Synthesis with Texture Patches](https://arxiv.org/abs/1706.02823)
- * TGAN - [Temporal Generative Adversarial Nets](https://arxiv.org/abs/1611.06624v1)
- * TGAN - [Tensorizing Generative Adversarial Nets](https://arxiv.org/abs/1710.10772)
- * TGAN - [Tensor-Generative Adversarial Network with Two-dimensional Sparse Coding: Application to Real-time Indoor Localization](https://arxiv.org/abs/1711.02666)
- * TP-GAN - [Beyond Face Rotation: Global and Local Perception GAN for Photorealistic and Identity Preserving Frontal View Synthesis](https://arxiv.org/abs/1704.04086)
- * Triple-GAN - [Triple Generative Adversarial Nets](https://arxiv.org/abs/1703.02291v2)
- * tripletGAN - [TripletGAN: Training Generative Model with Triplet Loss](https://arxiv.org/abs/1711.05084)
- * TV-GAN - [TV-GAN: Generative Adversarial Network Based Thermal to Visible Face Recognition](https://arxiv.org/abs/1712.02514)
- * UGACH - [Unsupervised Generative Adversarial Cross-modal Hashing](https://arxiv.org/abs/1712.00358)
- * UGAN - [Enhancing Underwater Imagery using Generative Adversarial Networks](https://arxiv.org/abs/1801.04011)
- * Unim2im - [Unsupervised Image-to-Image Translation with Generative Adversarial Networks](https://arxiv.org/abs/1701.02676) ([github](http://github.com/zsdonghao/Unsup-Im2Im))
- * Unrolled GAN - [Unrolled Generative Adversarial Networks](https://arxiv.org/abs/1611.02163) ([github](https://github.com/poolio/unrolled_gan))
- * VAE-GAN - [Autoencoding beyond pixels using a learned similarity metric](https://arxiv.org/abs/1512.09300)



GAN ZOO - Fin

- * VariGAN - [Multi-View Image Generation from a Single-View](<https://arxiv.org/abs/1704.04886>)
- * VAW-GAN - [Voice Conversion from Unaligned Corpora using Variational Autoencoding Wasserstein Generative Adversarial Networks](<https://arxiv.org/abs/1704.00849>)
- * VEEGAN - [VEEGAN: Reducing Mode Collapse in GANs using Implicit Variational Learning](<https://arxiv.org/abs/1705.07761>) ([github](<https://github.com/akashgit/VEEGAN>))
- * VGAN - [Generating Videos with Scene Dynamics](<https://arxiv.org/abs/1609.02612>) ([github](<https://github.com/cvondrick/videogan>))
- * VGAN - [Generative Adversarial Networks as Variational Training of Energy Based Models](<https://arxiv.org/abs/1611.01799>) ([github](<https://github.com/Shuangfei/vgan>))
- * VGAN - [Text Generation Based on Generative Adversarial Nets with Latent Variable](<https://arxiv.org/abs/1712.00170>)
- * ViGAN - [Image Generation and Editing with Variational Info Generative Adversarial Networks](<https://arxiv.org/abs/1701.04568v1>)
- * VIGAN - [VIGAN: Missing View Imputation with Generative Adversarial Networks](<https://arxiv.org/abs/1708.06724>)
- * VoiceGAN - [Voice Impersonation using Generative Adversarial Networks](<http://arxiv.org/abs/1802.06840>)
- * VRAL - [Variance Regularizing Adversarial Learning](<https://arxiv.org/abs/1707.00309>)
- * WaterGAN - [WaterGAN: Unsupervised Generative Network to Enable Real-time Color Correction of Monocular Underwater Images](<https://arxiv.org/abs/1702.07392v1>)
- * WaveGAN - [Synthesizing Audio with Generative Adversarial Networks](<https://arxiv.org/abs/1802.04208>)
- * weGAN - [Generative Adversarial Nets for Multiple Text Corpora](<https://arxiv.org/abs/1712.09127>)
- * WGAN - [Wasserstein GAN](<https://arxiv.org/abs/1701.07875v2>) ([github](<https://github.com/martinarjovsky/WassersteinGAN>))
- * WGAN-GP - [Improved Training of Wasserstein GANs](<https://arxiv.org/abs/1704.00028>) ([github](https://github.com/igul222/improved_wgan_training))
- * WS-GAN - [Weakly Supervised Generative Adversarial Networks for 3D Reconstruction](<https://arxiv.org/abs/1705.10904>)
- * XGAN - [XGAN: Unsupervised Image-to-Image Translation for many-to-many Mappings](<https://arxiv.org/abs/1711.05139>)
- * ZipNet-GAN - [ZipNet-GAN: Inferring Fine-grained Mobile Traffic Patterns via a Generative Adversarial Neural Network](<https://arxiv.org/abs/1711.02413>)
- * α -GAN - [Variational Approaches for Auto-Encoding Generative Adversarial Networks](<https://arxiv.org/abs/1706.04987>) ([github](<https://github.com/victor-shepardson/alpha-GAN>))
- * Δ -GAN - [Triangle Generative Adversarial Networks](<https://arxiv.org/abs/1709.06548>)



GAN ZOO - Fin?



Ian Goodfellow

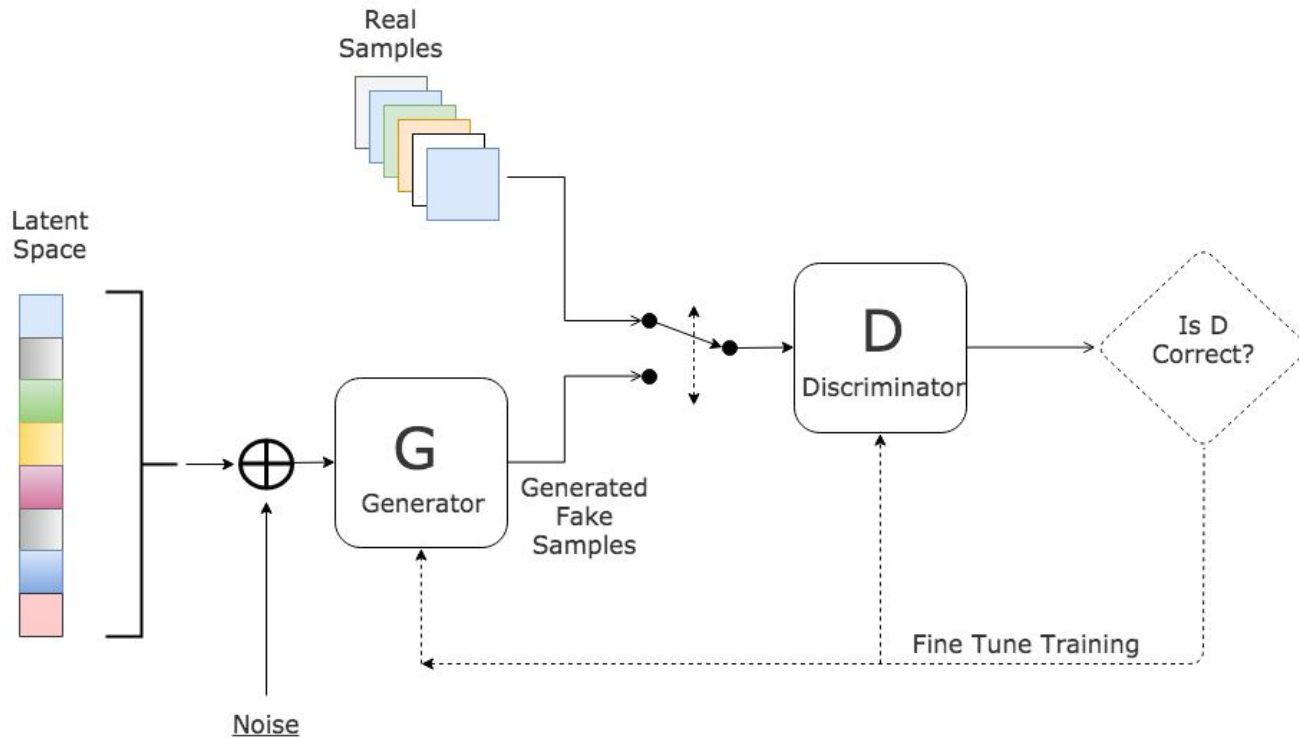
@goodfellow_ian

 **Follow**



"We use the Greek α prefix for α -GAN, as AEGAN and most other Latin prefixes seem to have been taken" arxiv.org/pdf/1706.04987...
:D

Generative Adversarial Network



<http://www.kdnuggets.com/2017/01/generative-adversarial-networks-hot-topic-machine-learning.html>

Mais à quoi ça sert?

- Simulation
 - Environnement
 - Données d'entraînement

- Données manquantes
 - Inpainting
 - Débruitage
 - Super-résolution

- Génération
 - Texte vers Parole
 - Texte vers Image
 - Image vers Image
 - Art

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 - Environnement
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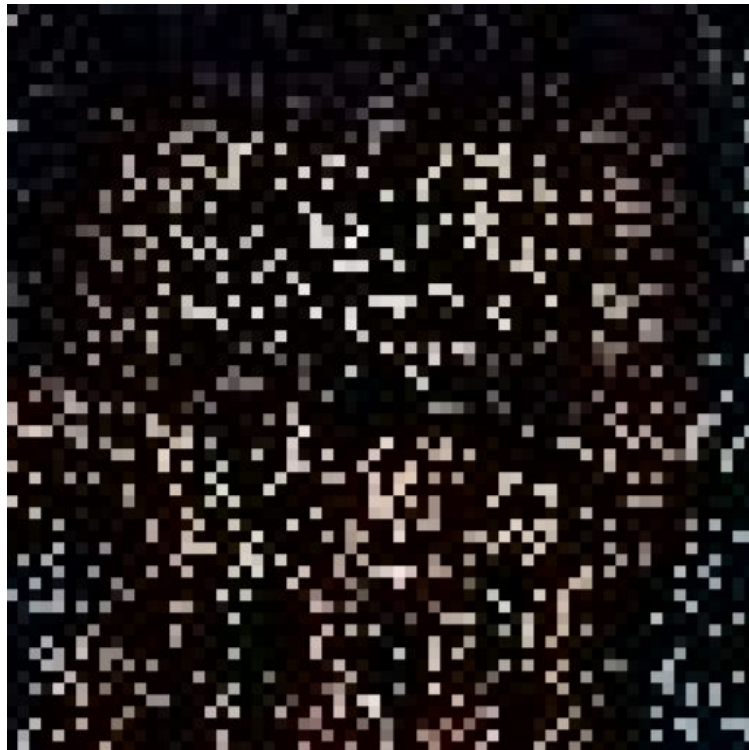
- Simulation
 - Environnement
 - Données d'entraînement

- **Données manquantes**
 - Inpainting
 - Débruitage
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- Simulation
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Qu'est-ce que c'est?



[Yeh et al. 2016](#)

Un visage!



[Yeh et al. 2016](#)

Restoration de document

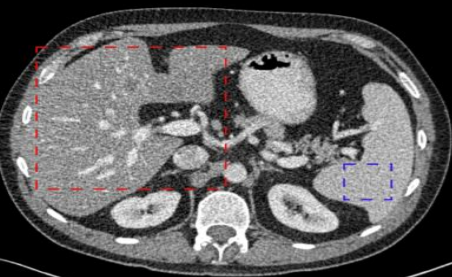


[Yeh et al. 2016](#)

- Simulation
 - Environnement
 - Données d'entraînement

- Données manquantes
 - Inpainting
 - **Débruitage**
 - Super-résolution

- Génération
 - Texte vers Parole
 - Texte vers Image
 - Image vers Image
 - Art



(a) Full Dose FBP Recon



(b) Quarter Dose FBP Recon



(c) CNN-MSE



(d) WGAN-MSE



(e) CNN-VGG



(f) WGAN-VGG

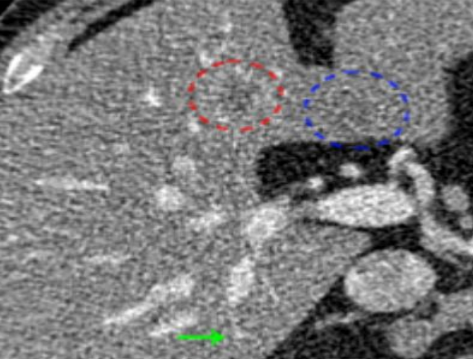


(g) WGAN

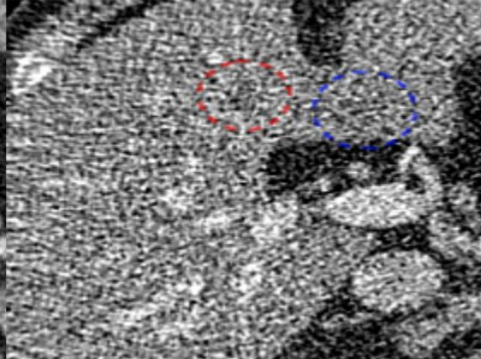


(h) DictRecon

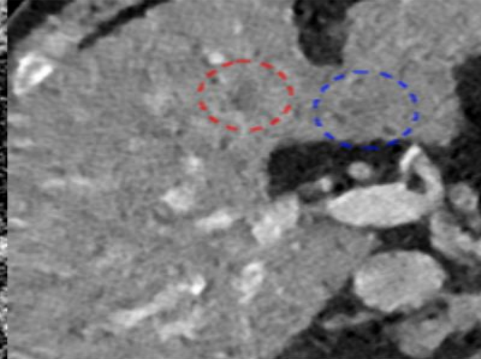
[Yang et al. 2017](#)



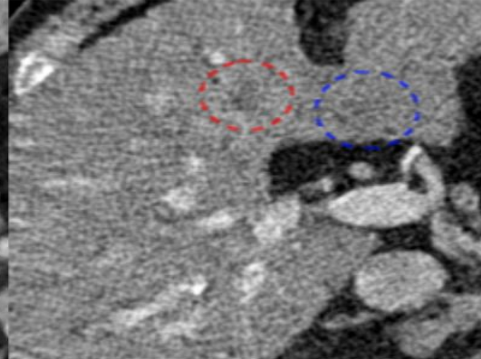
(a) Full Dose FBP Recon



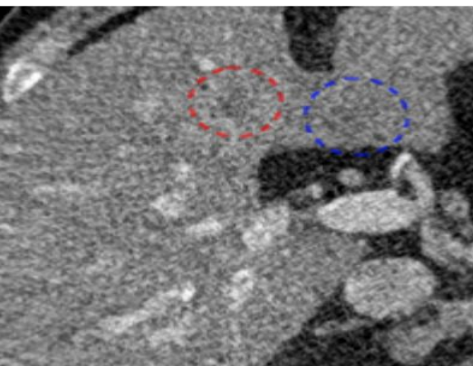
(b) Quarter Dose FBP Recon



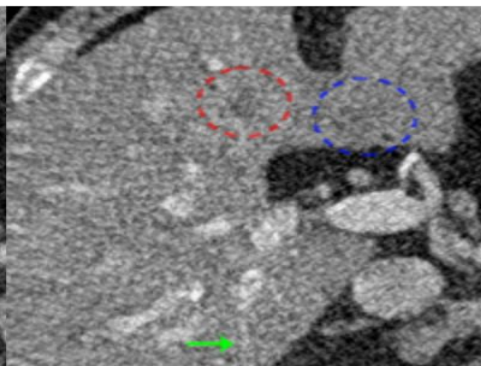
(c) CNN-MSE



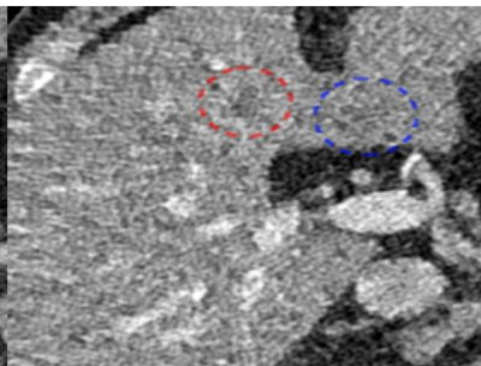
(d) WGAN-MSE



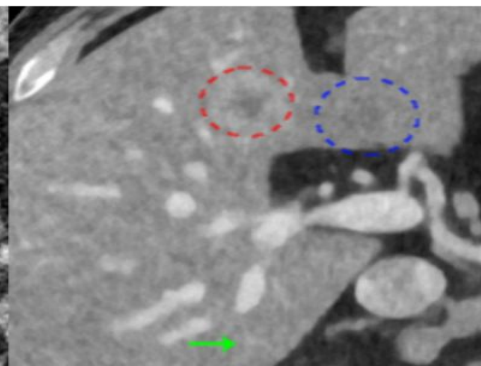
(e) CNN-VGG



(f) WGAN-VGG



(g) WGAN



(h) DictRecon

[Yang et al. 2017](#)

- Simulation
 - Environnement
 - Données d'entraînement

- Données manquantes
 - Inpainting
 - Débruitage
 - **Super-résolution**

- Génération
 - Texte vers Parole
 - Texte vers Image
 - Image vers Image
 - Art



bicubic
(21.59dB/0.6423)



SRResNet
(23.53dB/0.7832)



SRGAN
(21.15dB/0.6868)



original



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Tacotron 2

lyrebird.ai

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This bird is red and brown in color, with a stubby beak



The bird is short and stubby with yellow on its body



A bird with a medium orange bill white body gray wings and webbed feet



This small black bird has a short, slightly curved bill and long legs



A small bird with varying shades of brown with white under the eyes



A small yellow bird with a black crown and a short black pointed beak



This small bird has a white breast, light grey head, and black wings and tail



This flower has yellow petals along with green and yellow stamen



This flower is red and yellow in color, with petals that are ruffled and curled



This flower has petals that are yellow with red lines



This flower is white and pink in color, with petals that are oval shaped



A yellow flower with large petal with a large long pollen tubes



The petals on this flower are white with yellow stamen



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pix2pix

Colorisation de photo historique



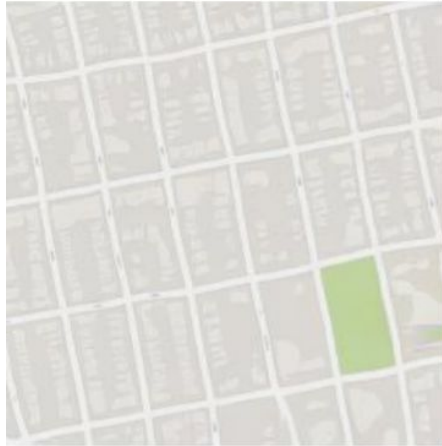
Lucy Li

Création de carte à partir d'image satellite

Input



CycleGAN



pix2pix



Ground truth



[Zhu et al. 2017](#)

Changement de saison dans une photo



winter Yosemite → summer Yosemite



summer Yosemite → winter Yosemite

Transfiguration d'animaux



<https://github.com/tatsuyah/CycleGAN-Models>



<https://twitter.com/jointentropy/status/867148895457091584>

Transfiguration d'animaux en vidéo



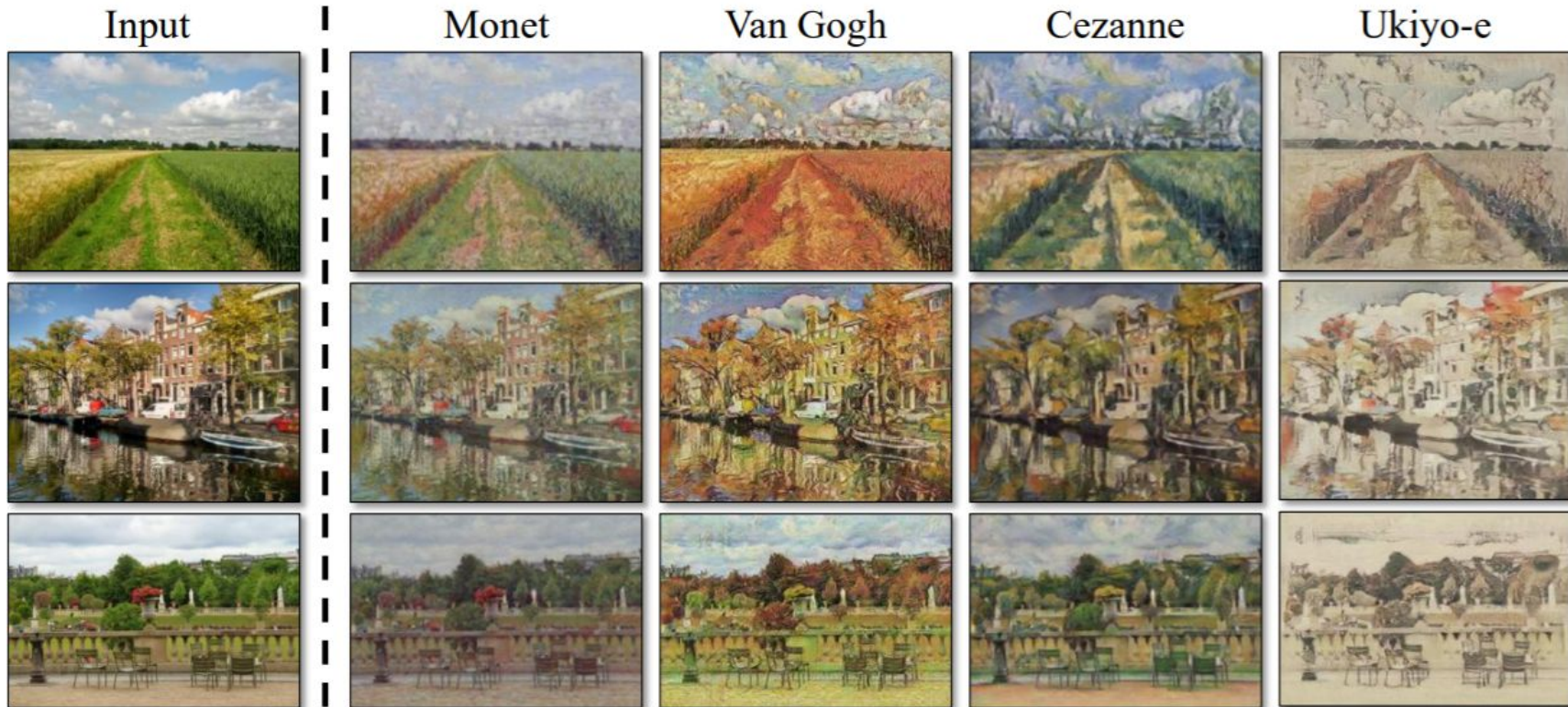
[Zhu et al. 2017](#)

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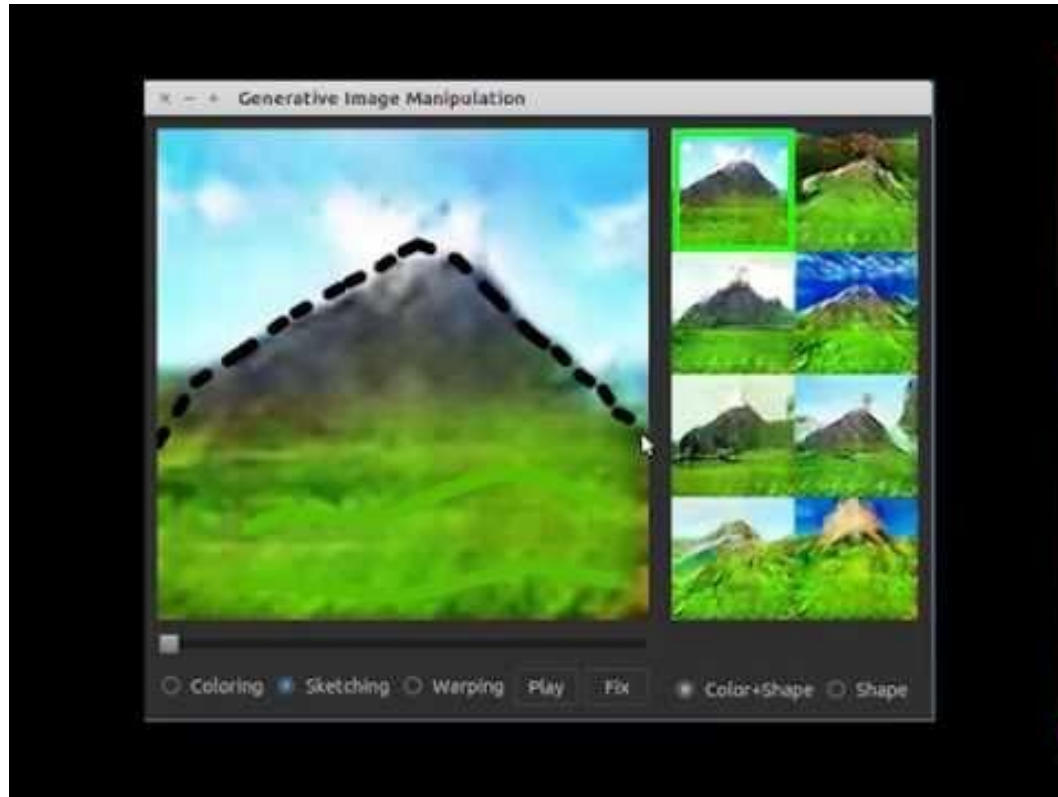
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Transfert de style



[Zhu et al. 2017](#)

Aide à la création d'art



[Zhu et al. 2016](#)

SampleRNN - Mozart

[Mehri et al. 2017](#)

Création de music



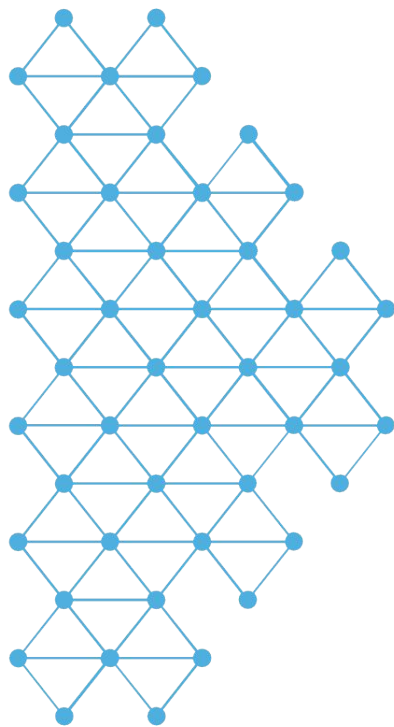
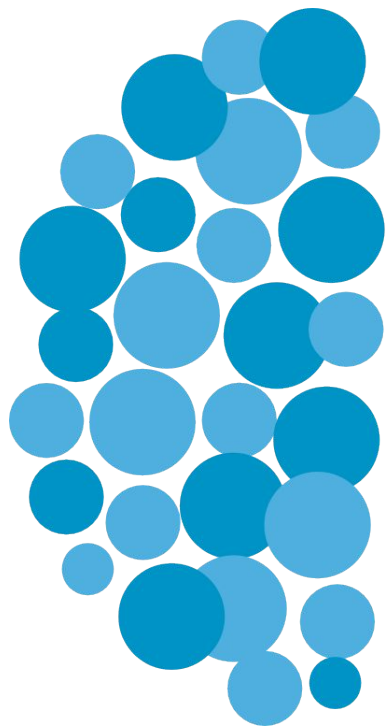
[Hadjeres et al. 2016](#)

Electro!



[Roberts et al. 2017](#)

Merci!



MILA