# f-GAN: Training Generative Neural Samplers using Variational Divergence Minimization

**Nowozin S, 2016**

**Abstract**

Generative Neural Samplers are probabilistic models, produces a sample from probability distribution defined by network weight. These models cannot be used for computing likelihoods.

Generative adversarial training allows to train models by using auxiliary discriminative neural network.

They show that any f-divergence can be used to train generative neural samplers .

**Introductions**

They drive GAN training objective for all f-divergences, they simplifies the saddle-point optimization procedure of Goodfellow and provided theoretical justification.

They provide experimental insight for estimating generative neural sampler for natural images.

They train generative neural samplers based on VDM on MNIST and LSUN datasets.

They used Variational Divergence Minimization (VDM) to estimate generative model