

# Tuning GANs

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# Tuning CTGAN

- Batch size (constant steps)
- Epochs (constant batch size)
- Dimensions (2 hyperparameters)
  - ▶ `embedding_dim` (int): Size of the random sample passed to the Generator. Defaults to 128.
  - ▶ dimensionality - 2 hyperparameters, but same value for each
    - ★ `discriminator_dim` (tuple or list of ints): Size of the output samples for each one of the Discriminator Layers. A Linear Layer will be created for each one of the values provided. Defaults to (256, 256).
    - ★ `generator_dim` (tuple or list of ints): Size of the output samples for each one of the Residuals. A Residual Layer will be created for each one of the values provided. Defaults to (256, 256).

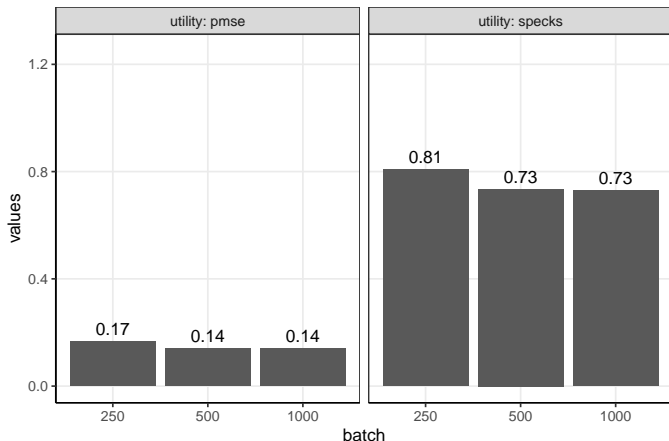
# Batch size, epochs, and steps

Table 1:

N	Batch size	Steps per Epoch	Epochs	Actual Steps
5.000	100	50	60	3,000
5.000	250	20	150	3,000
5.000	500	10	300	3,000
5.000	1.000	5	600	3,000
5.000	500	10	100	1,000
5.000	500	10	300	3,000
5.000	500	10	600	6,000
5.000	500	10	900	9,000

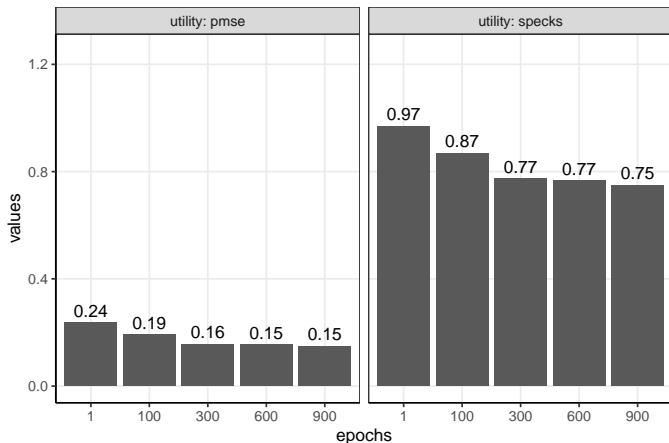
# Effect of batch size (constant steps)

Figure 1:



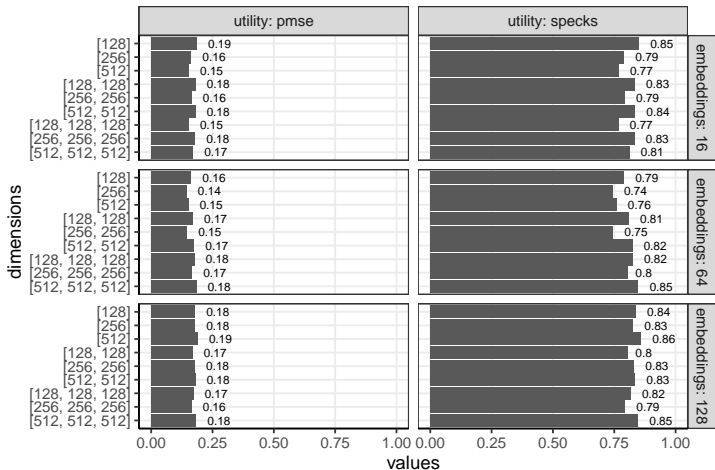
## Effect of epochs (constant batch size)

Figure 2:



# Effect of dimensions

Figure 3:



Thank you