

COMPARING THE LATENT SPACE OF GENERATIVE MODELS

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Latent variable generative models describe the probability distribution $p(x)$ of a datapoint x through marginalization over a vector of latent variables z , expressing the latent encoding of x . Different encodings may result in more or less effective and disentangled characterizations of the different explanatory factors of variation behind the data. Many works have been recently devoted to the exploration of the latent space of specific models, mostly focused on the study of trajectories producing desired alterations of data in the visible space. In this work we address the more general problem of comparing the latent space of different models, looking for transformations between them. The surprising, preliminary result discussed in this talk, full of implications for representation learning, is that (provided models have not been taught or explicitly conceived to act differently) a simple linear mapping is enough to pass from a latent space to another preserving most of the information.

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