

# Variational Autoencoder for Collaborative Filtering

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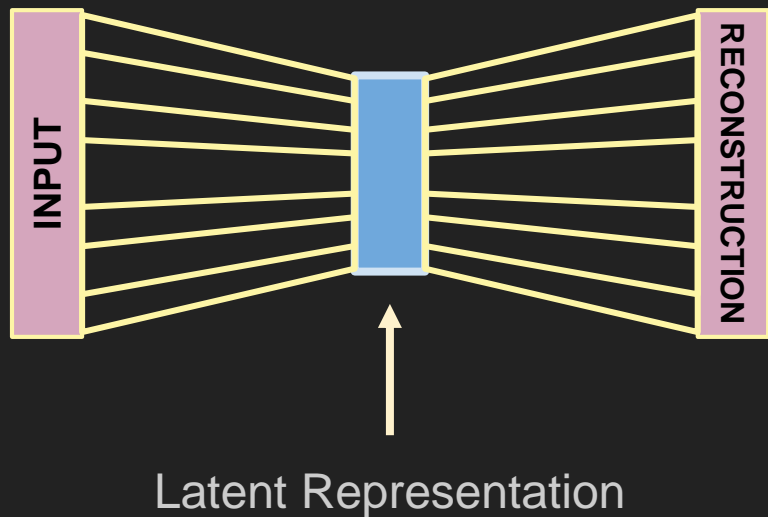
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# What is a Variational AutoEncoder?

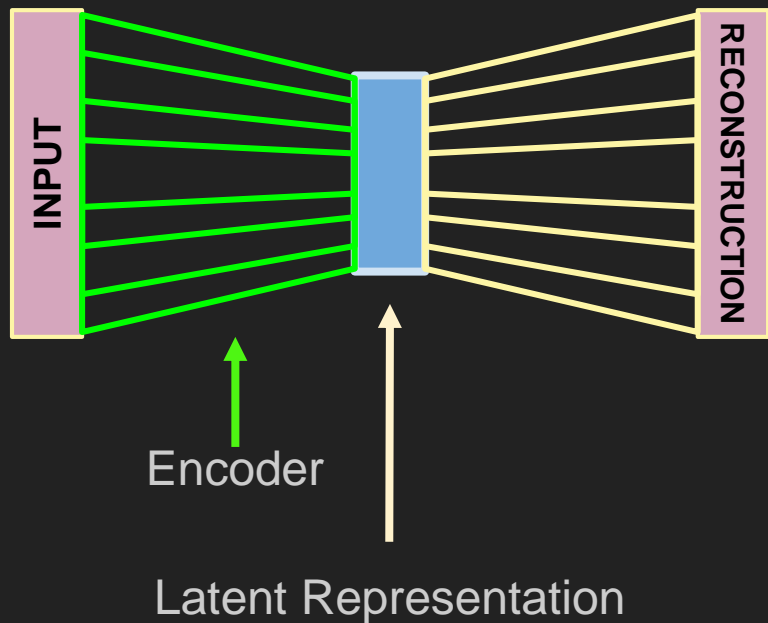
# What is a Variational AutoEncoder?



## AutoEncoders:

“Compress” the information in the input in such a way that it allows reconstruction.

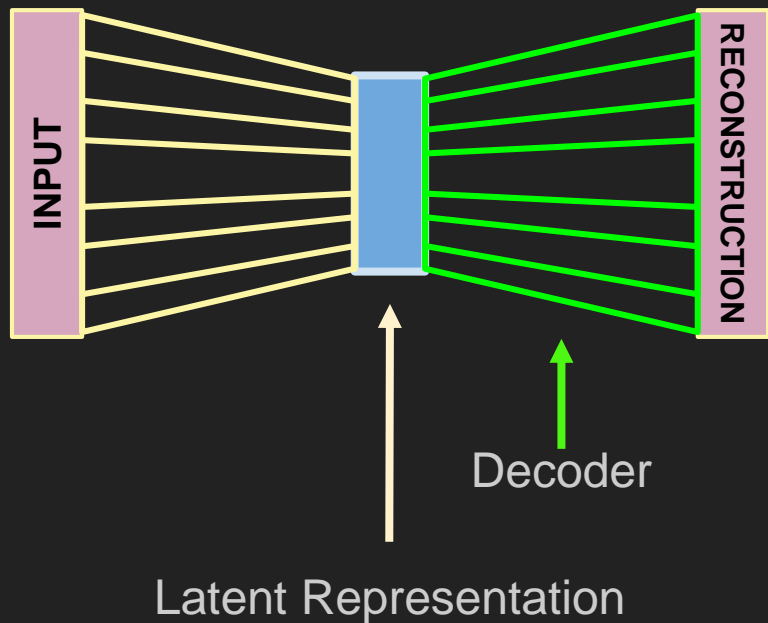
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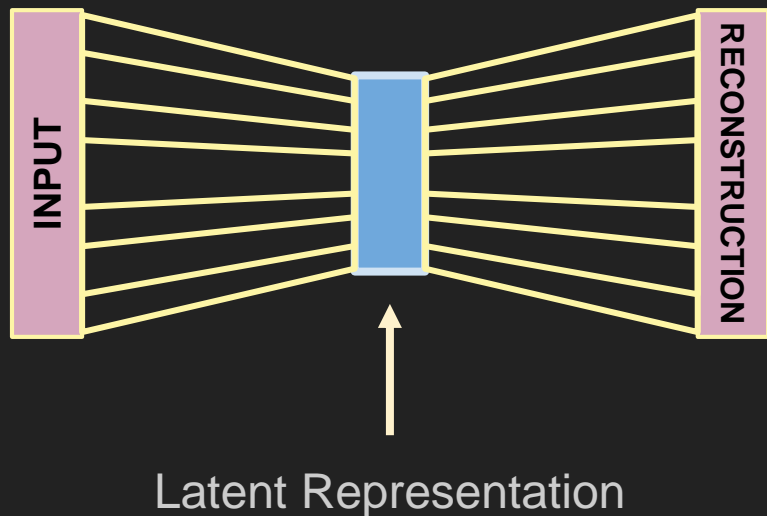
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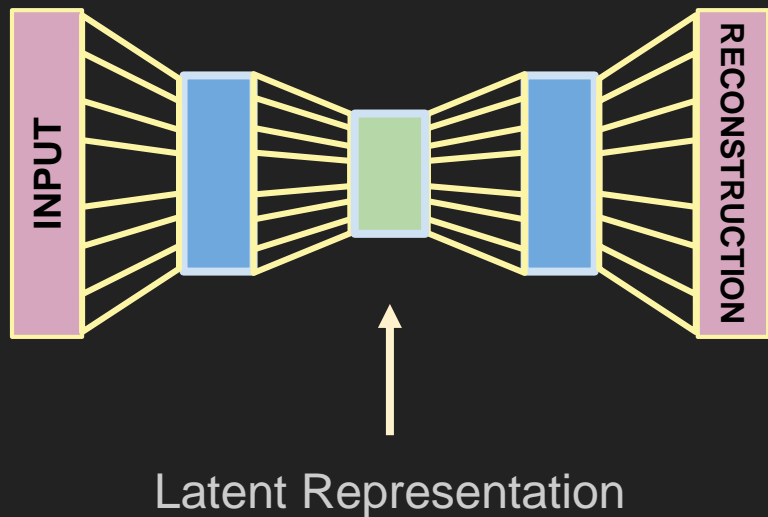
# What is a Variational AutoEncoder?



## MATRIX FACTORIZATION

It is a kind of autoencoder that reconstructs the input by finding linear relations in the data.

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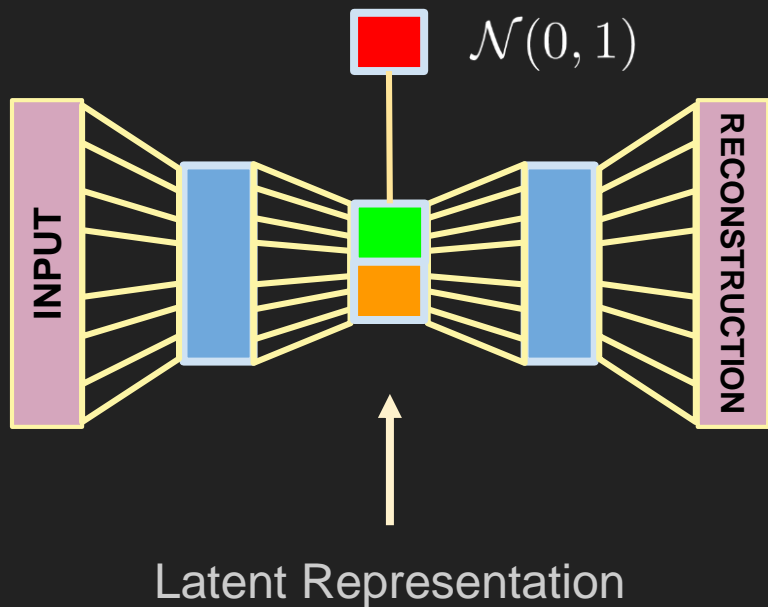


## DEEP LEARNING

Allows to find non-linear representations.



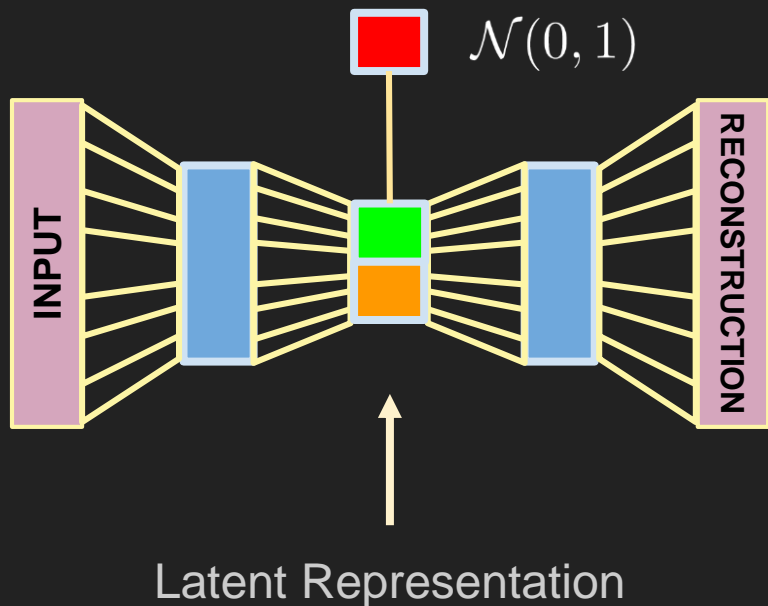
# What is a Variational AutoEncoder?



## VARIATIONAL INFERENCE

Changes the latent space to be parameters for a distribution from which sampling corresponds to reconstruction.

# Variational AutoEncoder for CF



## IMPLICIT FEEDBACK

We want to represent users in the latent space.

For every user the implicit feedback representation will be the input.