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Representation Learning for Collider Events

Thursday 16 January 2020 09:20 (20 minutes)

Variational Autoencoders (VAEs) can be trained to learn representations of metric spaces. I will show how a VAE trained to minimize the Earth Movers Distance (EMD) between input and reconstructed jets learns to represent jet features associated with hierarchically different energy scales in orthogonal directions of its latent space. I will also illustrate the relationship between the scale-dependent dimensionality of the learnt representation and the dimensionality of the metric space.

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Session Classification: Decorrelation and Semi/Unsupervised approaches