

Transport-Based Transforms Using One or Multiple Reference Distributions: LOT and the Barycentric Coding Model

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This talk will be structured in three parts. Part 1: We begin with the Linearized Optimal Transport (LOT) framework, a transform defined with respect to a single reference distribution. We will review its construction, properties, and applications. Part 2: We extend to the Barycentric Coding Model (BCM) for the Wasserstein distance, which expands the LOT framework by using multiple reference distributions. Part 3: We further adapt the BCM to the Gromov-Wasserstein (GW) setting, enabling comparisons between distributions supported on different metric spaces, such as graphs or networks. We will discuss how to perform synthesis (constructing barycenters) and analysis (estimating coordinates) in this setting, using two different algorithms and show some applications.

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