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### [Lecture 8: Distance measures](#)

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> 2. Objective

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## 2. Objective

### Total Variation Distance, Kullback-Leibler (KL) divergence, and the Maximum Likelihood Principle

At the end of this lecture, you will be able to do the following:

- Describe properties of the **total variation distance** and **Kullback-Leibler (KL) divergence**.
- Compute the total variation distance and KL divergence between two distributions.
- Derive the **maximum likelihood principle** using the KL divergence.
- Define and **compute the likelihood** of a discrete distribution.

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