Unsupervised Hashing with Similarity Distribution Calibration
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Background
- Similarity collapsed in hash codes space when we preserve the feature similarity naively.

Simulation Distribution Calibration

- We reveal the fundamental similarity collapse problem suffered by existing pairwise similarity preservation-based unsupervised hashing methods.
- We propose a Similarity Distribution Calibration (SDC) method by aligning the hash code similarity distribution towards a calibration distribution (e.g., beta distribution) with sufficient spread across the entire similarity range, thus alleviating similarity collapse problem.

Highlights

Similarity Collapsing Problem

• Toy Example

Qualitative Results

Pairwise similarity distribution

Retrieval Example