Generalized Learning Graph Quantization

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Overview - I

- Extension of learning vector quantization algorithms to graphs
  - LVQ
  - LVQ 2.1

  revealed good performance (SSPR'11).
- We expect improved performance when extending
  - generalized LVQ (Sato et al.)
  - generalized relevant LVQ (Hammer et al.)
  - soft robust LVQ (Seo et al.)

  to the graph domain

Overview - II

- Extension is based on orbifold framework
  - isometric embedding: represent graphs as points of a Euclidean quotient space
  - solve LVQ for graphs locally in Euclidean space
- Results: GLVQ, GRLVQ, RSLVQ
  - outperform LVQ, LVQ2.1
  - show state-of-the-art performance w.r.t. solution quality
  - show superior performance w.r.t. computation time