Project Overview

- Geometric pattern matching is a fundamental problem, occurring in
  - Computer Vision
  - Computational Drug Design
  - Computational Biology

- Need efficient algorithms for computing similarity between a pattern and
  - a target object (one-to-one matching)
  - a database of objects (one-to-many matching)
• Designed novel algorithm for solving one-to-many matching problems for curves (accepted to SoCG’2002)

• Discovered a new method for one-to-many matching of color and texture histograms (via Earth-Mover Metric), by embedding the metric into the Euclidean space
Research Plan for the Next Six Months

• Implement the Earth-Mover Metric embedding
• Test the quality of the embedding on large image databases (e.g., CorelDraw)
• Implement efficient algorithms for similarity search in Euclidean space
• Integrate the components, create a high-performance system for similarity search in image databases