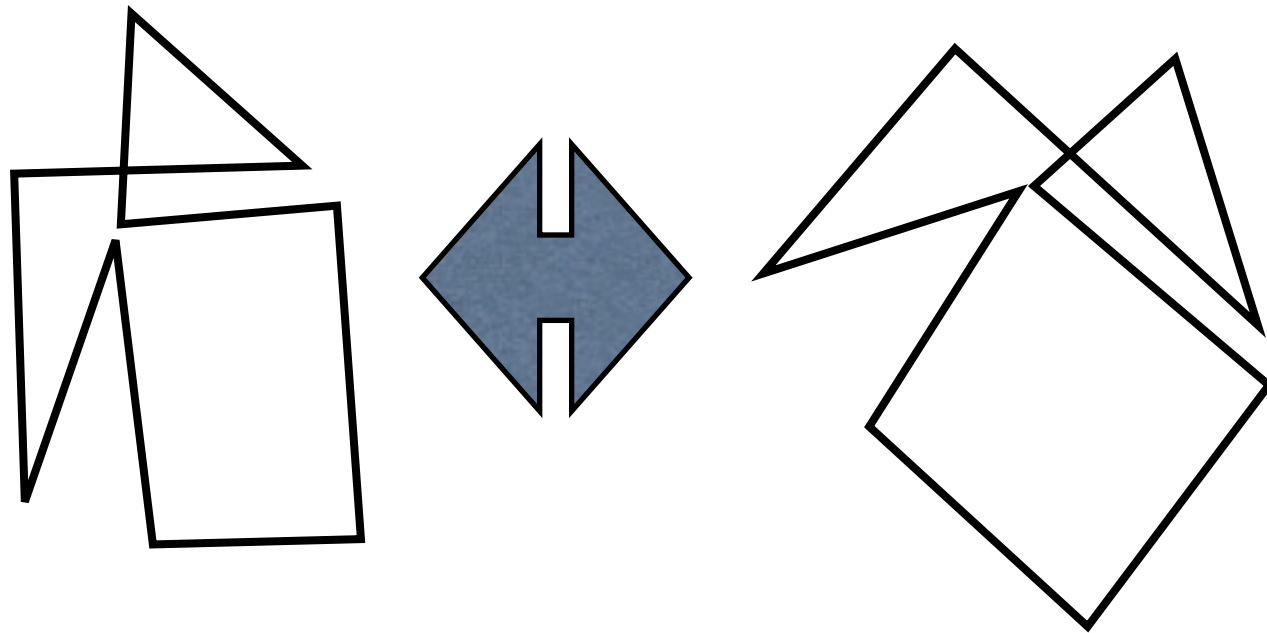


Graph-Edit-Distances

Buote Xu

What is GED?



Possible usecases?

- Matching
- Ranking (Classification)

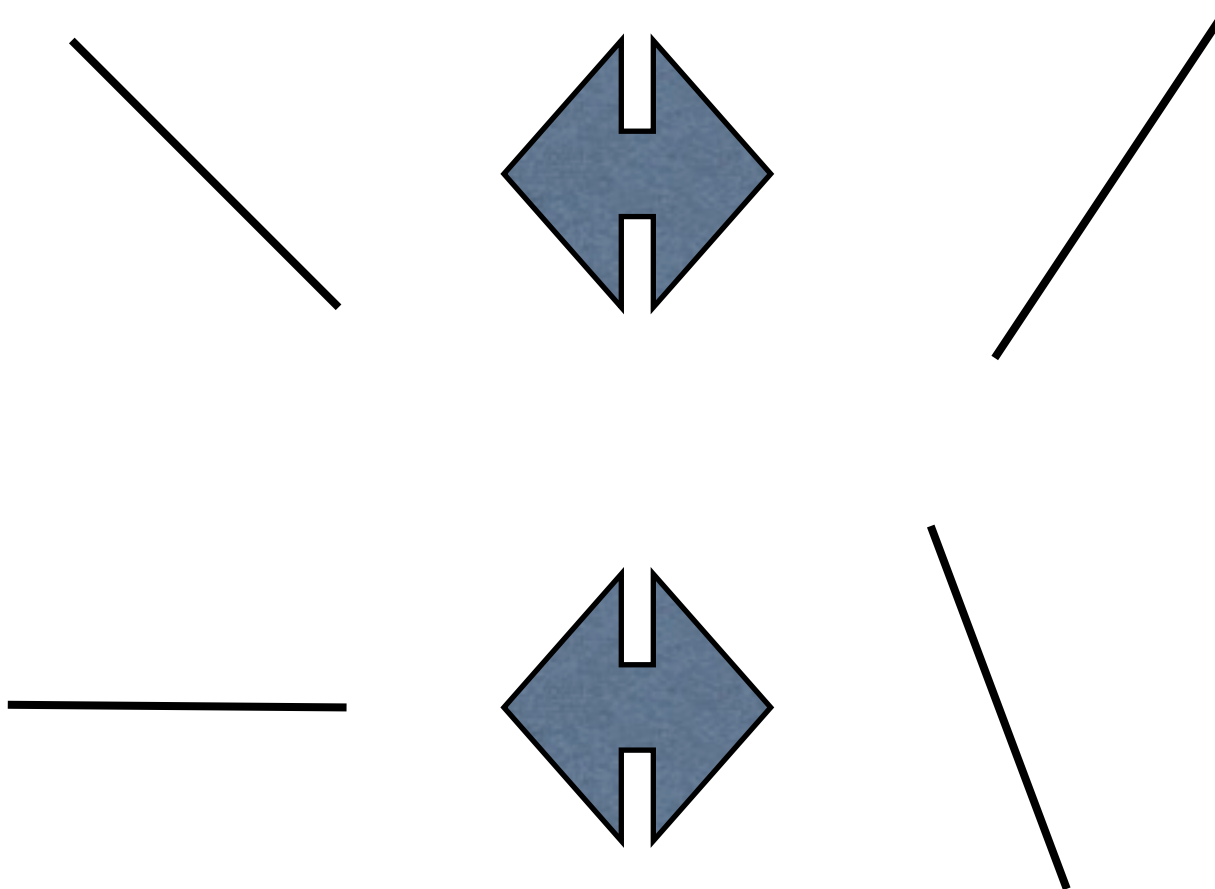
Heuristics

- Via Cost-function
- Nodes
- Edges

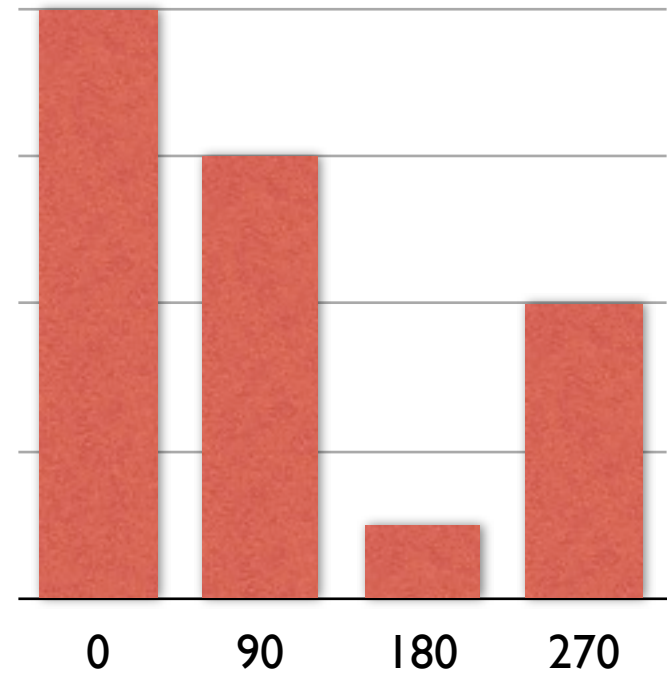
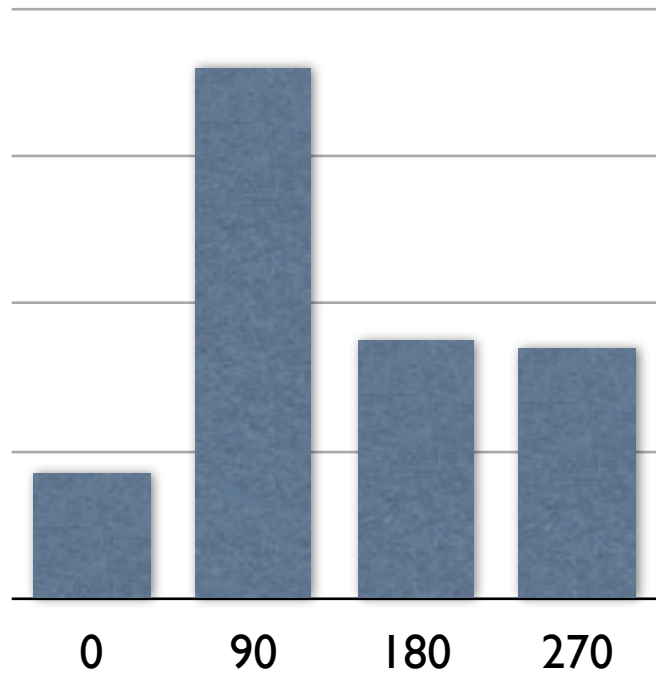
Heuristics (cont'd)

- Interpretation
- Stability
- Invariance
- Speed (Duh.)

Angle-Based



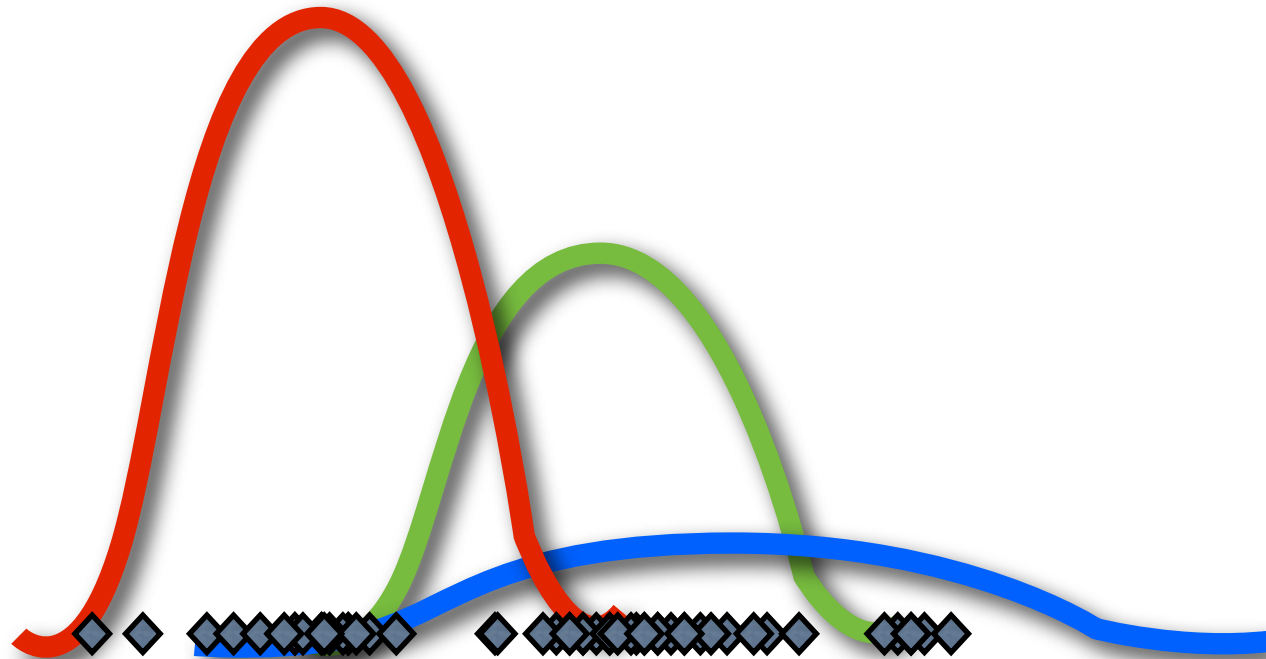
Histograms



Problems

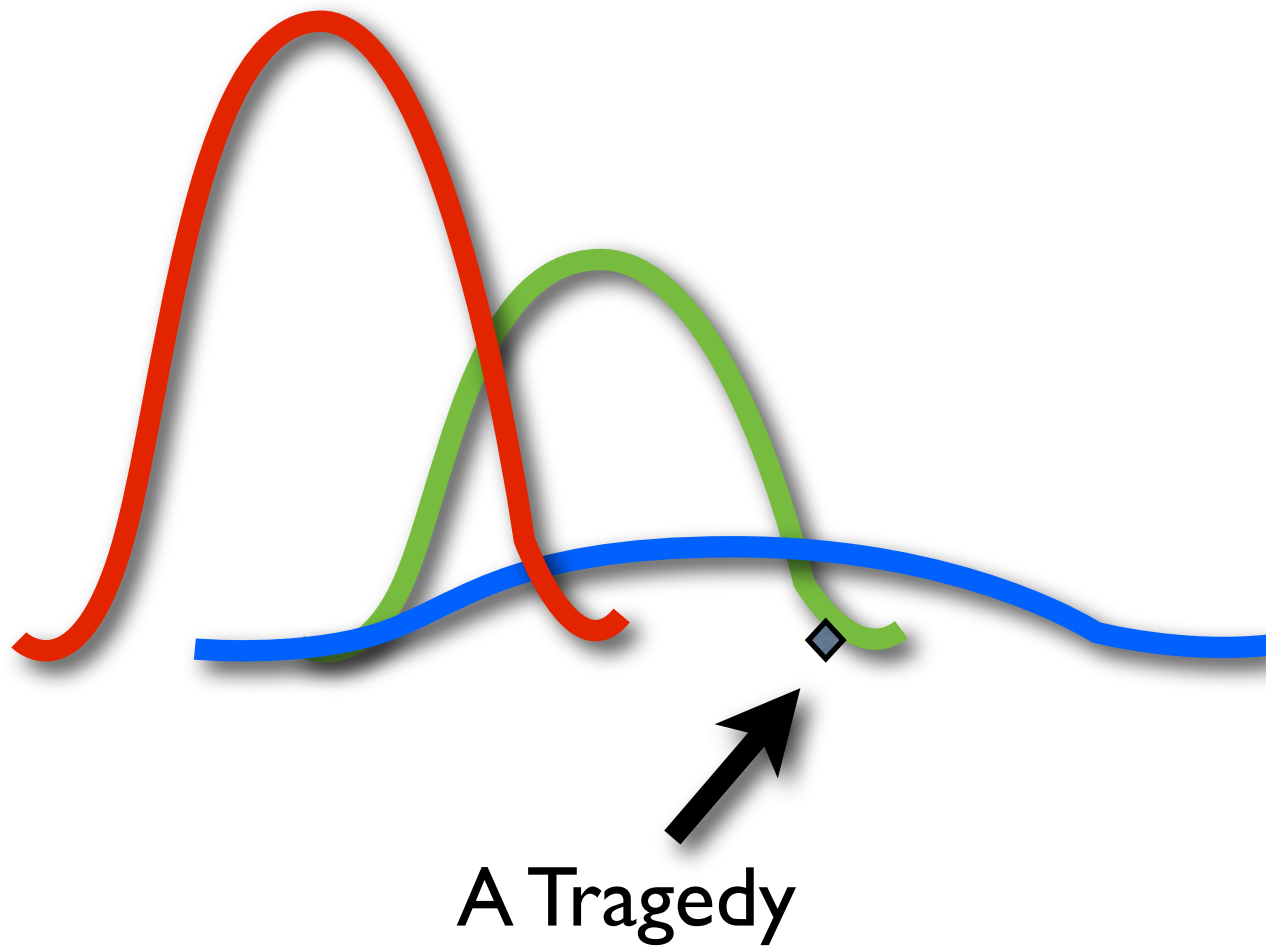
- Higher Dimensions
- What does the result mean?
- Inflexibility

GMM



A statistic

GMM (cont'd)



Hidden Markov Models

- Equivalent: Finite State Machines
- Used to model text and speech
- Time matters!

HMM (cont'd)

- Base on GMM
- What is a state?
- Time? Nodes? Edges?



| |
|-----|
| 0,6 |
| 0,1 |
| 0,3 |

| | | |
|-----|-----|-----|
| 0,2 | 0,4 | 0,6 |
| 0,1 | 0,7 | 0,2 |
| 0,3 | 0,2 | 0,5 |

Distances

- Distance or Similarity?
- Kullback-Leibler
Integral can't be solved analytically -
Only Approximations.