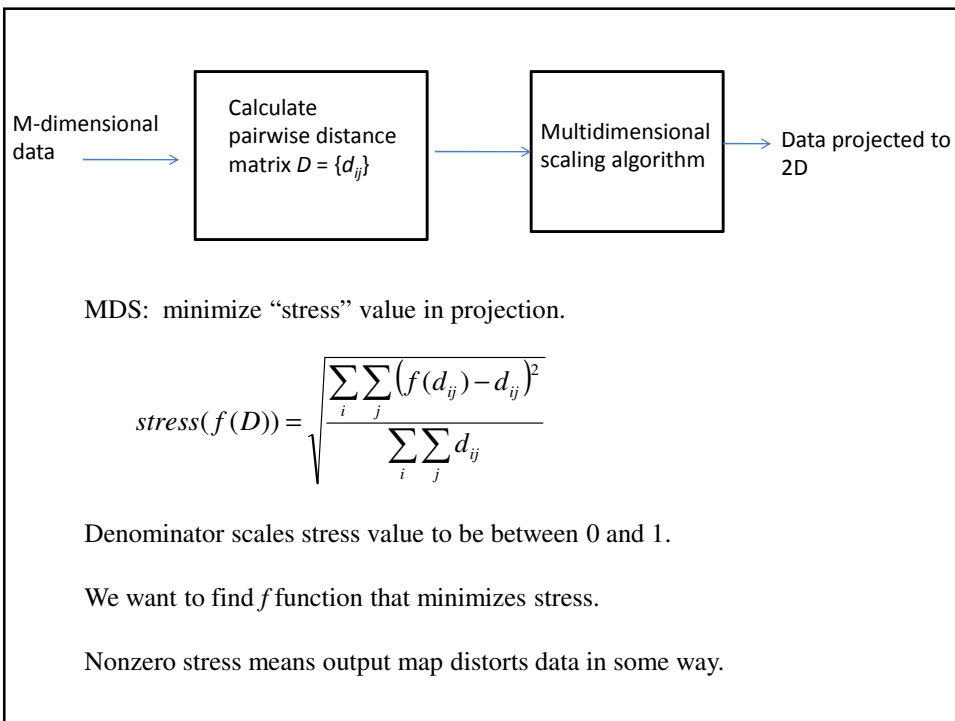


## LSA/LSI

- Applications in Search Engine Optimization (SEO) video  
[http://www.youtube.com/watch?v=0hl\\_9aqIILM](http://www.youtube.com/watch?v=0hl_9aqIILM)

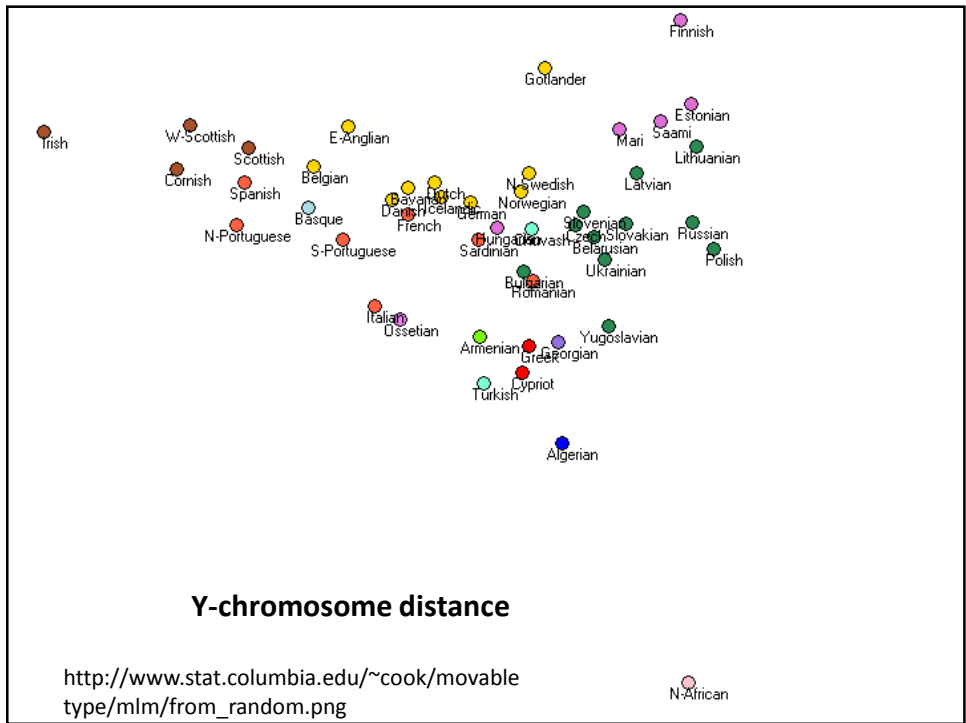
## Multidimensional Scaling

- **Recall PCA:**
  - Project multidimensional data into lower-dimensional feature space that captures major directions (axes) of variation.
- **Multidimensional scaling:**
  - More general method: project multidimensional data into lower-dimensional feature space that preserves (as far as possible) distances between data points
- **Advantages:**
  - Only need to know distances  $d_{ij}$  between objects  $i$  and  $j$ , not measured values of variables, numbers of variables, or how distances are calculated.



## Examples of MDS

[http://www.pavis.org/essay/multivariate\\_visualization\\_techniques.html](http://www.pavis.org/essay/multivariate_visualization_techniques.html)



Machine learning conferences and their similarity. To compute the similarity between the conferences, use [Jaccard distance](#), based on the proportion of authors that publish in both venues (set intersection of authors of both venues) versus those that publish in either (set union of authors of both venues).

<http://www.stat.columbia.edu/~cook/movabletype/mlm/mds-graph.png>

