**Computer Vision Methods Used to Measure Image Similarity**

Appendix for Unraveling the visual and semantic components of object representation. Leeds, Seibert, Pyles, Tarr

**SIFT (Scale-Invariant Feature Transformation)**
Identify points of interest in picture and define scaled, rotated frame around each point. Features in each frame represent the presence of edges at multiple scales and orientations. Resulting representation exhibits invariance to spatial shift, rotation, and scale.

Circle size and line direction represent frame scaling and orientation


**Geometric Blur**
Select points along edges. For each point, features are obtained by blurring the portion of the picture around the point and taking samples evenly distributed across the blurred region.


**Shock Graph**
Use a graph (set of nodes and edges) to represent the contours of each object’s silhouette.


**Scene Gist**
Represent each picture as a weighted set of components (cf, PCA), where each component captures a common spatial frequency property of natural scenes. Features are component weights.

Image from Doi et al., 2003