

Bag of Words

Aplicaciones de Soft-computing

Bag of Words

- El modelo "bolsa de palabras".
- This technique is used to process documents.
- Documents are represented ignoring the word order



Bag of Words

Of all the sensory impressions proceeding to the brain, the visual experiences are the dominant ones. Our perception of the world around us is based essentially on the messages that reach our eyes. For a long time, the retinal image was considered as a visual centers in the brain. As a movie screen, the image is discovered. We know the perception is more complex, following the path to the various parts of the cortex. Hubel and Wiesel have demonstrated that the message about the image falling on the retina undergoes a stepwise analysis in a system of nerve cells stored in columns. In this system each cell has its specific function and is responsible for a specific detail in the pattern of the retinal image.

**sensory, brain,
visual, perception,
retinal, cerebral cortex,
eye, cell, optical
nerve, image
Hubel, Wiesel**

China is forecasting a trade surplus of \$90bn (£51bn) to \$100bn this year, a threefold increase on 2004's \$32bn. The Commerce Ministry said the surplus would be created by a predicted 30% increase to \$750bn, compared with \$660bn. The increase will annoy the US. China's deliberate policy to agree to a yuan is a government also needs to demand so much country. China has the yuan against the dollar and permitted it to trade within a narrow band but the US wants the yuan to be allowed to float freely. However, Beijing has made it clear that it will take its time and tread carefully before allowing the yuan to rise further in value.

**China, trade,
surplus, commerce,
exports, imports, US,
yuan, bank, domestic,
foreign, increase,
trade, value**

Bag of Words

- Document «Sensory perception»

Of all the sensory impressions proceeding to the brain, the visual experiences are the dominant ones. Our perception of the world around us is based essentially on the messages that reach our eyes. For a long time, the retinal image was considered as a simple movie screen. It was discovered that the visual image is analyzed in a more complex way. Following the path to the various centers of the cerebral cortex, Hubel and Wiesel have demonstrated that the message about the image falling on the retina undergoes a step-by-step analysis in a system of nerve cells stored in columns. In this system each cell has its specific function and is responsible for a specific detail in the pattern of the retinal image.

**sensory, brain,
visual, perception,
retinal, cerebral cortex,
eye, cell, optical
nerve, image
Hubel, Wiesel**

China is forecasting a trade surplus of \$90bn (£51bn) to \$100bn this year, a threefold increase on 2004's \$32bn. The Commerce Ministry said the surplus would be created by a predicted 30% increase in exports to \$750bn, compared with \$575bn in 2004, and a fall in imports to \$660bn. The ministry said the surplus would annoy the US, but China's government has deliberately agreed to keep the yuan's value low. The government also needs to meet the demand for US goods in the country. China has permitted it to trade within a narrow range but the US wants the yuan to be allowed to move freely. However, Beijing has made it clear that it will take its time and tread carefully before allowing the yuan to rise further in value.

**China, trade,
surplus, commerce,
exports, imports, US,
yuan, bank, domestic,
foreign, increase,
trade, value**

Bag of Words

- Document «Maket analysis»

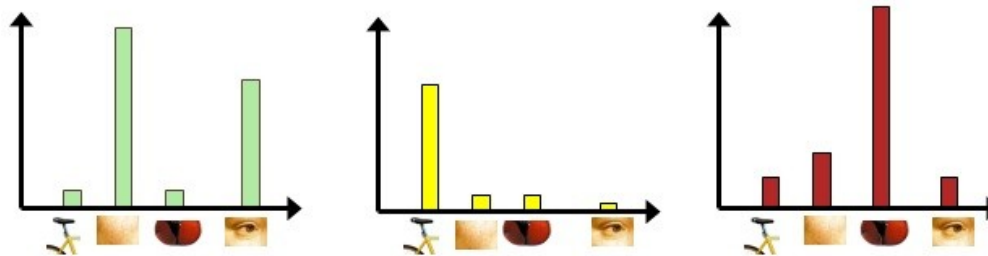
Of all the sensory impressions proceeding to the brain, the visual experiences are the dominant ones. Our perception of the world around us is based essentially on the messages that reach our eyes. For a long time, the retinal image was considered as a simple picture. As a matter of fact, the visual centers in the brain are more complex than a movie screen. The image falling on the retina undergoes a complex analysis in a system of nerve cells stored in columns. In this system each cell has its specific function and is responsible for a specific detail in the pattern of the retinal image.

**sensory, brain,
visual, perception,
retinal, cerebral cortex,
eye, cell, optical
nerve, image
Hubel, Wiesel**

China is forecasting a trade surplus of \$90bn (£51bn) to \$100bn this year, a threefold increase on 2004's \$32bn. The Commerce Ministry said the surplus would be created by a predicted 30% increase in exports to \$750bn, compared with \$575bn in 2004. The surplus of \$660bn. The surplus would be created by a predicted 30% increase in exports to \$750bn, compared with \$575bn in 2004. The surplus would be created by a predicted 30% increase in exports to \$750bn, compared with \$575bn in 2004.

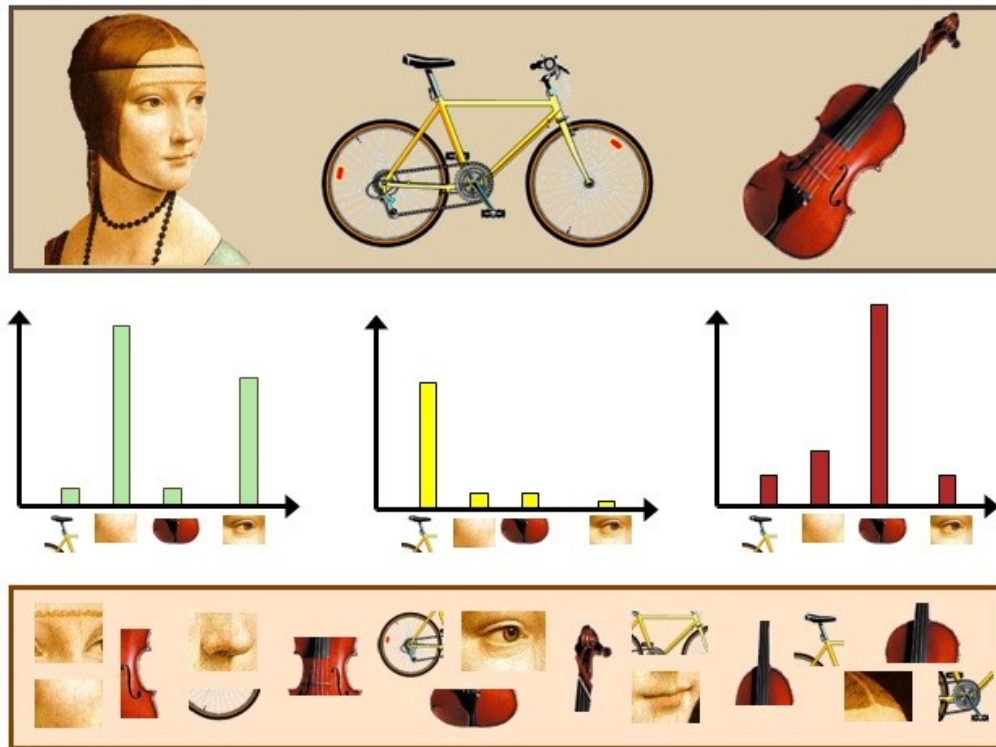
**China, trade,
surplus, commerce,
exports, imports, US,
yuan, bank, domestic,
foreign, increase,
trade, value**

Bag of Words



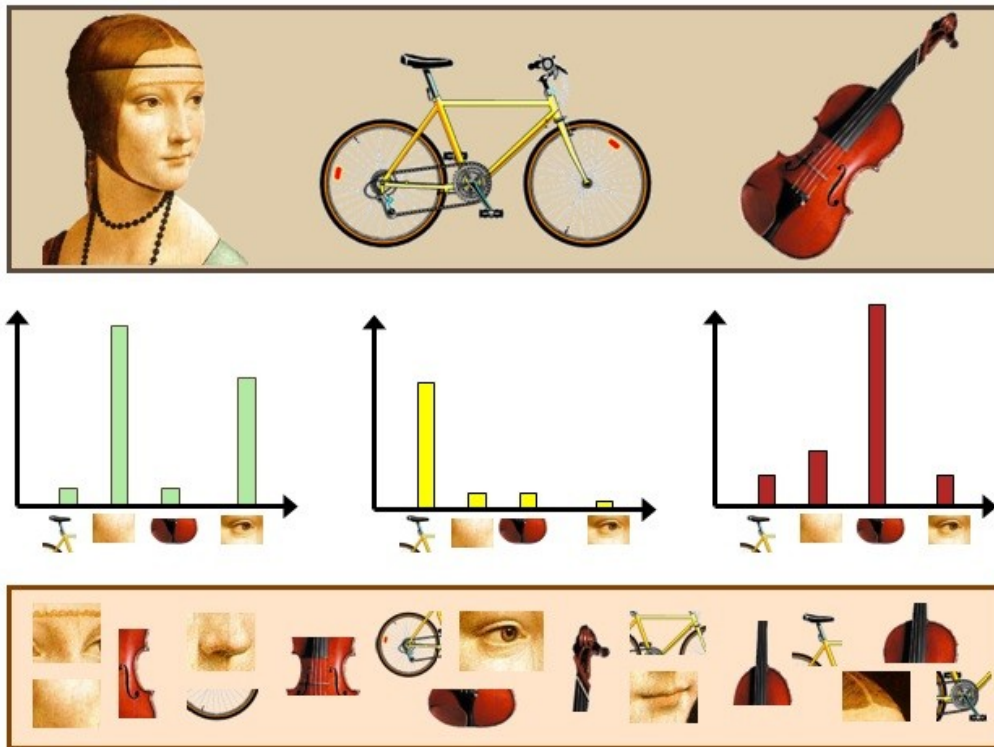
Bag of Words

- Image with «human face»



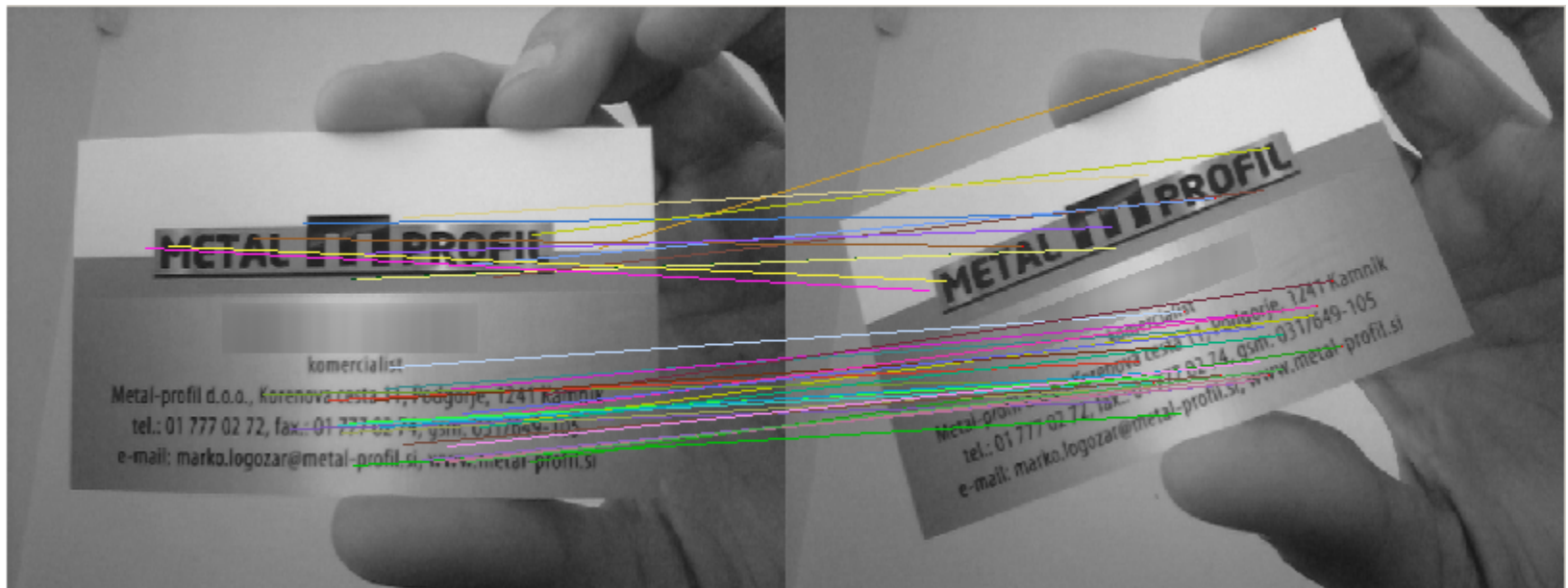
Bag of Words

- Imagen con «bicicleta»



SIFT

- Scale-invariant features transform
- “Distinctive Image Features from Scale-Invariant Keypoints” Lowe, D.G. International Journal of Computer Vision (2004) 60: 91.

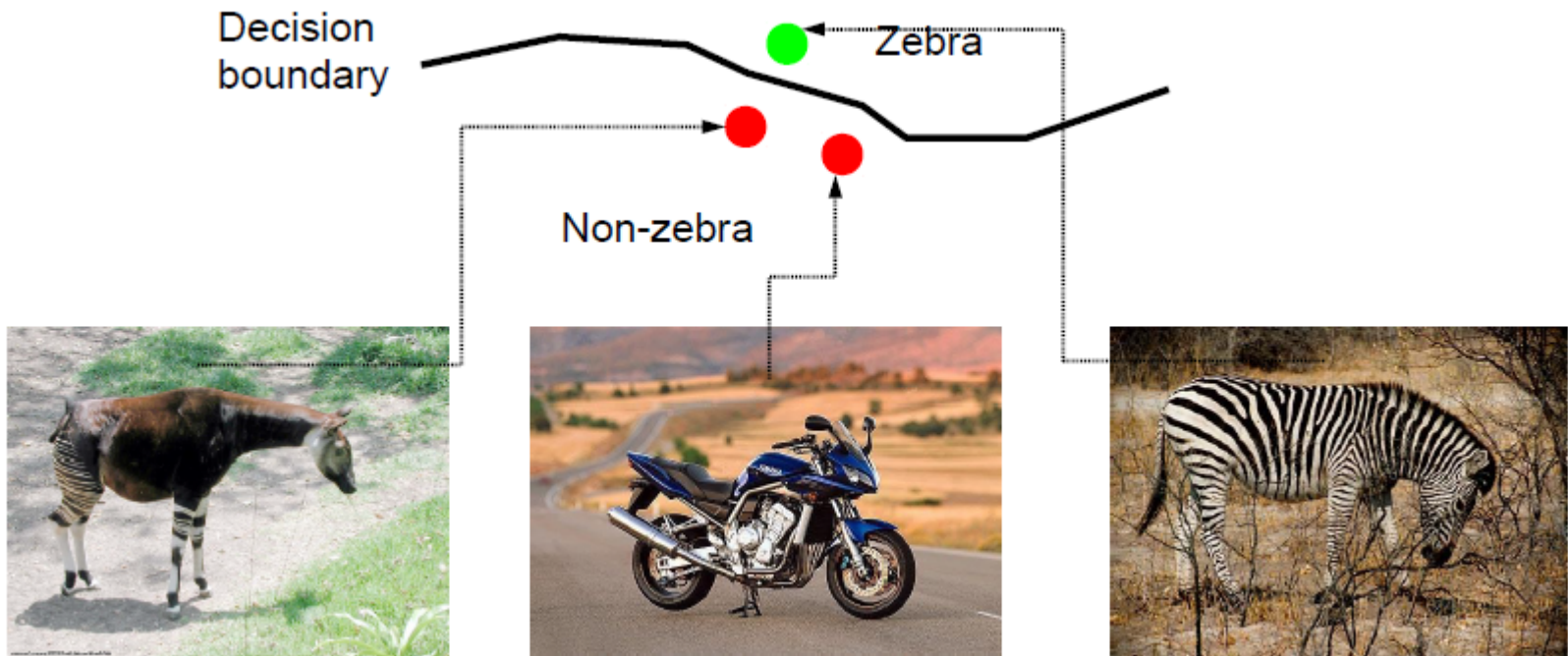


Descriptores

- Harris-Laplace
- Color-SIFT
- SURF
- ORB
- ...

Bag of Words

- Separating images using Bag of Words



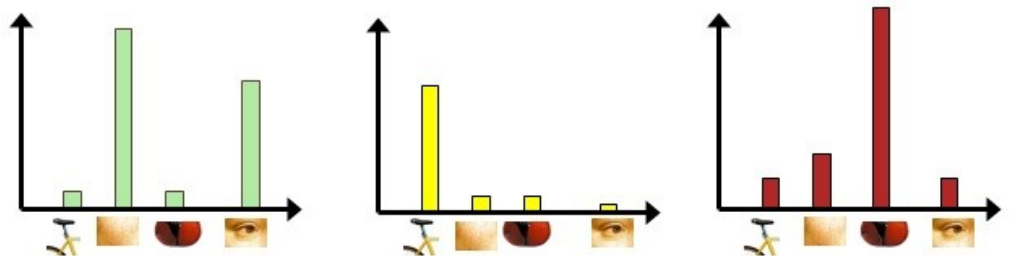
Bag of Words

- Image to classify



Bag of Words

- Imagen to Clasify
- Obtain features
- Centroids and histogram



Bag of Words

- Imagen to Clasify
- Obtain features
- Centroids and histogram
- K-NN classification

