Advanced pattern recognition course at TUDELTF

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Talk outline

- Main themes in APR course
- Material for teaching
- Relevant themes for research at the department
- Final assignment
Main themes in APR course

- Classification and discriminant analysis
- Classifier evaluation
- Cluster analysis and semi-supervised learning
- Data representations
- Feature extraction
- Feature selection
- Classifier complexity
- Combining classifiers, bagging, boosting
- Image segmentation and recognition
The course provided handouts with presentations and exercises to use the pattern recognition toolbox PRTOOLS 4.1.

Datasets such as NIST handwritten digits, Delft Image database, Highway images, etc for training and evaluation of pattern recognition systems are available.

This material will be used for the pattern recognition course to be taught next semester at the Master level.
Dissimilarities representation
This approach will be used for the development of the research project: System for defective electrical equipment infrared image retrieval using Content Based Image Retrieval currently developed by the group DESTINO

Relevant themes for research at the department

- Dissimilarities representation
  This approach will be used for the development of the research project: *System for defective electrical equipment infrared image retrieval using Content Based Image Retrieval* currently developed by the group *DESTINO*

- Any application in which automatic classification is important, i.e.:
  Classification of land use in civil engineering, biosequences analysis, signal analysis etc.

The final assignment was made by using infrared nondestructive testing data which is thermal contrast curves extracted from composite materials. This can be found in: http://cic.puj.edu.co/wiki/doku.php?id=grupos:secsy:secsy.