ΣΕΜΙΝΑΡΙΟ ΤΜΗΜΑΤΟΣ

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Πανεπιστήμιο Ιωαννίνων

ΗΜΕΡΟΜΗΝΙΑ: Παρασκευή, 10 Ιουνίου 2016
ΩΡΑ: 12:00
ΑΙΘΟΥΣΑ: Αίθουσα Σεμιναρίων (ισόγειο Ι11)
Κτήριο Τμήματος Μηχανικών Η/Υ & Πληροφορικής

Θέμα

Multimodality in Data Clustering: Application to Video Summarization

Περίληψη

Clustering constitutes an essential problem in machine learning and data mining with important applications in science, technology and business. In this talk, multimodality is related to clustering in two different ways.

The first part of this talk focuses on the clustering of data that are multimodal in the sense that multiple representations (views) are available for each data instance, coming from different sources and/or feature spaces. Typical multi-view clustering approaches treat all available views as being equally important. We will present approaches that assign a weight to each view. Such weights are automatically tuned to reflect the quality of the views and lead to improved clustering solutions.

In the second part of this talk the term 'multimodality' is used to express dataset inhomogeneity given some similarity or distance measure. We will present criteria for estimating the homogeneity of a group of data instances based on statistical tests of unimodality. Then we will describe the use of such criteria for developing incremental and agglomerative clustering methods that automatically estimate the number of clusters. We will also discuss methods for sequence segmentation that use the above criteria for deciding on segment boundaries.

Finally, we will present results from the application of the above clustering and segmentation methods for video summarization, and, more specifically, for video sequence segmentation and extraction of representative key-frames.