PART-BASED OBJECT RETRIEVAL WITH BINARY PARTITION TREES

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DVMM lab
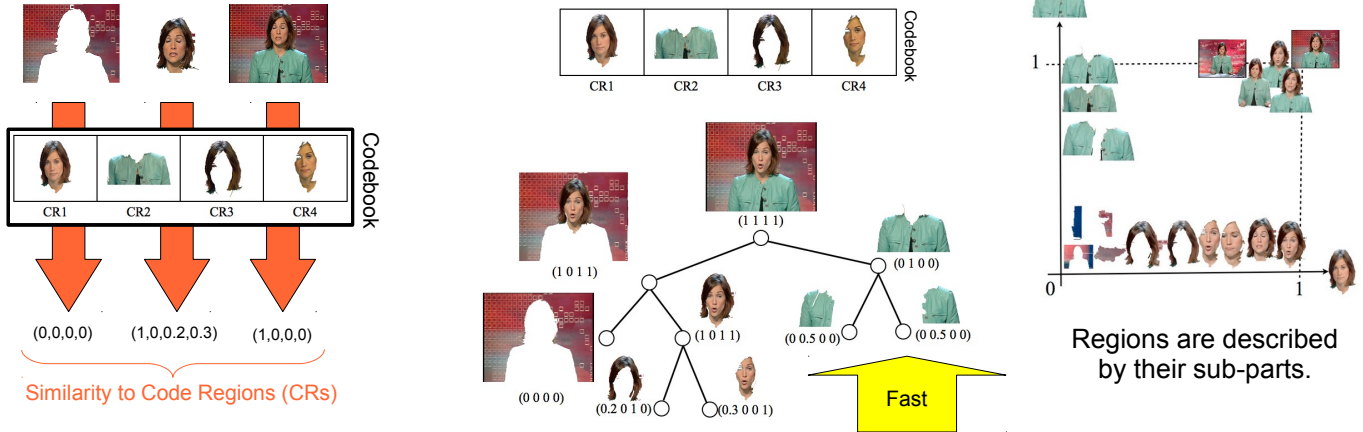digital video | multimedia laboratory

Features: Hierarchy of Bags of Regions (HBoR)

Possibilistic Quantization [Bezdek 1995]

+

Bottom-up Max Pooling [Boureau 2010]
&
Binary Partition Tree [Salembier 2000]

=

Parts Space

Similarity to Code Regions (CRs)

Fast

Regions are described by their sub-parts.

Query by Example: Matching Object Tree vs Image Partition Tree

Object Tree of the Query

Partition Tree of the Target image

- common
Top-down matching

+ common
Bottom-up matching

1. Set a match for Q0

2. Find matches for Q1 & Q2

Sets a baseline

1. Find candidates for Q1 & Q2

2. Try new unions to match Q0
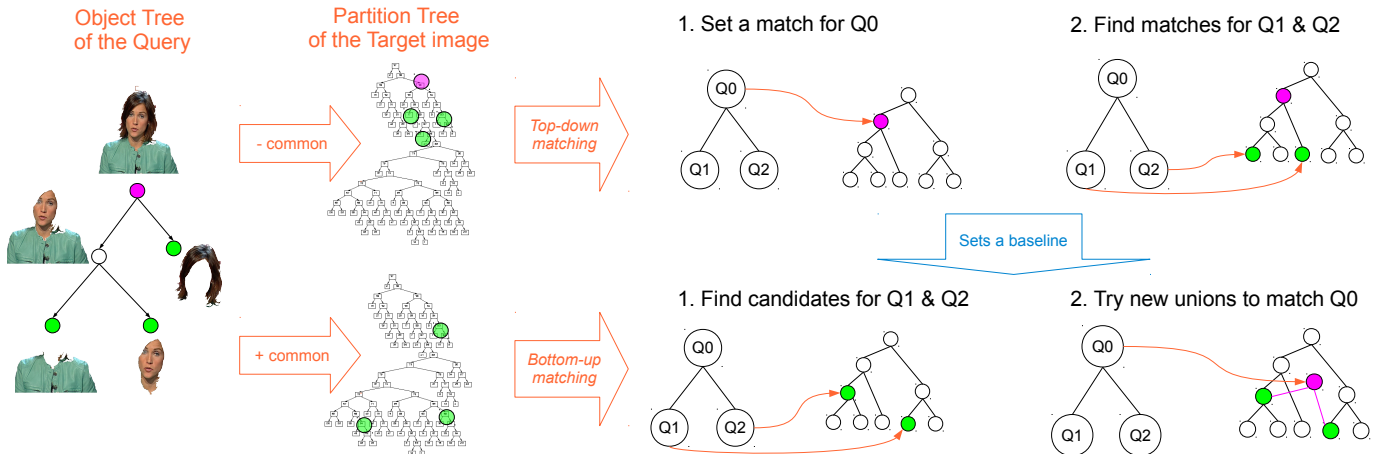
Query by Concept: Model of parts and top-down exploration

Multiple Instance Query

Parts definition

Fusion classifier

Inclusion classifier

Detector classifier

Parts

Model of the Query Concept

Efficient

Not explored