

# Semantics from Interactions in Image Databases

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## *Abstract*

Image databases have to deal with the problem of meaning. At first sight, the problem appears conceptually well defined: I want an image of a car, and I have a pretty good idea of what a car is and what it looks like. If we analyze the problem a little bit more in depth, however, we will see that assigning meaning to patches of pixels in the image is all but trivial. This is in part due to the well known technical problems of segmentation, model matching, and so on. We will argue, however, that there are much more fundamental difficulties that prevent the extraction of "objects" from the image and their automatic association with linguistic constants like "car"

As a consequence of this, the meaning of an image should be considered as a result of the interaction between the user and the database, rather than as an intrinsic property of the images. This leads naturally to replacing the "retrieval" paradigm with the "exploration" paradigm. In other words: image databases are more akin to data mining than to traditional databases.

We need to create a whole new set of concepts and tools to work in the exploration paradigm. Many of these tools are interface tools. We present some of them and discuss their utility for exploration of image databases.