Object Recognition by Intelligent Training and Learning

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While recognizing objects and scenes in images comes naturally to a human being, the process is much more difficult for a machine. The initial approaches to solving the object recognition problem relied on small sets of carefully built repositories of labeled data, which were used to train complex models capable of handling the task.

As the number of free images (available online) has increased, it has become possible to collect massive repositories of labeled images with the help of crowd sourcing. With this increase of available data, machines can now learn to automatically identify objects with simple models, even in noisy images.

This project is composed of three main stages, as follows:

1. *Image retrieval*: As image search on the web becomes increasingly affected by spammers, the ability to filter images appropriately is of ever-increasing importance. The goal of this stage is to produce valid image-search results, such that the image accurately represents the intent of the query.

2. *Crowd Sourcing-based image labeling and segmentation*: Through use of mobile devices and game applications, we plan to engage a large segment of the population so that they may donate their time and abilities in order to segment and label images.

3. *Big Data approach for object recognition*. Implementation of simple learning models will allow the machine to eventually recognize objects in unlabeled images.

This poster will represent the preliminary design of the above system