Urbanmatch: Linking Smart Cities Datasets with Human Computation
Last Updated Sunday, 10 March 2013

To realize the Smart Cities vision, applications can leverage the large availability of open datasets related to urban environments. Those datasets need to be integrated, but it is often hard to automatically achieve a high-quality interlinkage. Crowd-sorcing and, in particular, Human Computation approaches can be employed to solve such a task where machines are ineffective.

 UrbanMatch [1] is a Game with a Purpose for players in mobility aimed at validating links between points of interest and their photos. With Urbanmatch, we bring Human Computation in urban settings basing task to be solve in the game not only on people’s background knowledge, but also on people’s physical presence in the urban environment and ability to directly interact with it. The experimental evaluation of the iOS game conducted in Milano achieved both an high throughput and accuracy in the inter-linking task.

Urbanmatch displays 8 photos of POIs. The photos are selected according to the following policy:
 - four photos are taken from those known to be definitely linked to POIs around the player;
 - two photos are taken from those known to be definitely linked to POIs the player cannot see from its current location; and
 - the remaining two photos are taken from a set of photos that may be linked to POIs around the player.

The players are then asked to pair the photos depicting the same POI, but they must be careful not to select those photos referring to POIs they cannot see, i.e. those POIs they cannot see around them. As a result, players provide positive and negative evidences about what is depicted in the photos, thus allowing to link photos to POIs.

For more information:
 - watch the video on you tube
 - try out the game on you iOS device

References[1] Irene Celino, Simone Contessa, Marta Corubolo, Daniele Dell’Aglio, Emanuele Della Valle, Stefano Fumeo, Thorsten Krüger: Linking Smart Cities Datasets with Human Computation - The Case of UrbanMatch. International Semantic Web Conference (2) 2012: 34-49. http://dx.doi.org/10.1007/978-3-642-35173-0_3 [2] Irene Celino, Simone Contessa, Marta Corubolo, Daniele Dell'Aglio, Emanuele Della Valle, Stefano Fumeo, Thorsten Krüger: UrbanMatch - linking and improving Smart Cities Data. LDOW 2012. http://ceur-ws.org/Vol-937/ldow2012-paper-10.pdf