TIC'14: The ISPRS Tracking and Imaging Challenge 2014

http://www2.isprs.org/commissions/comm2/wg8/tic.html

Call for Participation

Summary

The ISPRS Tracking and Imaging Challenge 2014, TIC'14, is aiming at stimulating research and excellent work at the interface of two distinct disciplines working with spatiotemporal data – the image processing and the GIScience & spatial computing community. This is going to be achieved by a challenge requiring that two types of data are linked in innovative ways, namely trajectory data as it is captured for example from mobile positioning sensors, smart cards, or e-tags, and image data as it is captured for example from tourist photos on Flickr, smartphones, CCTV, or car mounted cameras. You may even think of wearable computing. Thus the challenge is on purpose broad and open to allow for unorthodox and novel applications and methods.

Motivation and Objectives of the Challenge

One of the promises of merging heterogeneous data sources is that the whole can be bigger than the sum of its parts. In addition to the challenge of merging heterogeneous data sources (variety) further aspects of this challenge can be their interpretation in near-real time from streaming data (velocity), or managing the noise that comes with cheap mobile sensors (veracity).

TIC'14 has been set up to demonstrate the potential of voluminous, real-time, heterogeneous, biased and noisy *spatiotemporal* data. It aims to promote the integration of imagery data with other trajectory data for novel applications or unorthodox solutions. In order to do so it encourages thinking outside of the box, or across disciplines.

- The Tracking and Imaging Challenge 2014 has the following objectives:
- By integrating (at least) imagery data and trajectory data demonstrate novel applications or unorthodox solutions,
- Expose expertise within ISPRS more broadly, and collaborate and integrate with other disciplines,
- Promoting science and engineering to the public.

The Challenge in Detail

TIC'14 is setting up a challenge to the various involved communities:

Combine two typically separately analysed forms of data, *trajectory data sets* and *image data sets*, for any purpose you can think of. We are not prescriptive about the purpose; quite the contrary we are looking for original purposes, or for surprising solutions.

There are only two conditions for participating in this challenge:

- The presented idea must fundamentally require both types of data, i.e., cannot be realized with one data set alone.

- The set task must demonstrate strong and novel benefits from integrating these two data sets

The combination of the data sets can happen at any level of processing, from sensing through analysis to communicating derived information. Applications can be chosen in any field, for example (but without preference) urban informatics, transportation research, natural environment observation and management, or marine applications. They could aim, for example (again, without preference), to track individuals, vehicles, or crowds in physical or social environments, to analyse movement or activity patterns or densities, or to communicate observed dynamics of movement or activities. Goals could be, for example:

- To close the semantic gap between trajectories and movement explanation
- To analyse human social behaviour or environmental response while moving
- To interpret trajectories from image sequences
- To communicate routes by pictures
- To analyse changes in the environment

Individuals or teams accepting the challenge must submit their contribution by the submission deadline below. A submission consists of (a) a demonstrable implementation and (b) a short paper presenting the idea, explaining how the criteria were addressed and why you think your approach is providing novel benefits, and testing the idea. All submissions will be reviewed for meeting the specifications of the challenge. Submissions passing this selection will be invited to the TIC'14 Workshop for presentation and demonstration.

The challenge sets out the following prizes among presented submissions:

- First prize: CHF 2,500 plus certificate, for the most original contribution to the TIC'14 theme according to the jury's recommendations
- Second prize: CHF 500 plus certificate, for the follow-up
- All other selected participants at the workshop receive a certificate of recognition

In addition, submitting teams will be invited to contribute for a special issue of the ISPRS International Journal of Geo-Information.

Accepted submissions will be judged by an independent panel of international senior experts from the involved disciplines. Panel members and organizers and their team members are excluded from participation.

Time plan

- Publication of call for participation: 15 January 2014
- Submission deadline: 27 July 2014
- Notification of acceptance: 8 August 2014
- TIC Workshop: Special sessions during the ISPRS TC III Mid-Term Symposium PCV, Zurich, 7-9 September 2014
- Submission of papers for special issue: 15 January 2015

Organizers

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Jury

- A jury of international senior researchers will judge the submissions.

Website

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