3D Mapping, Modeling and Surface Reconstruction

A Special Track of the

10th International Symposium on Visual Computing (ISVC14)

http://www.isvc.net

December 8-10, 2014

Las Vegas, Nevada, USA

Scope:

Three dimensional mapping, modeling and surface recognition from calibrated and uncalibrated images is an active field with many applications in human computer interaction, autonomous navigation, and surveillance. More recently, these discoveries have received particular interest in space exploration where advances in 3D computer vision are revolutionizing the field of planetary mapping by automating time-consuming, manually intensive data processing techniques. Furthermore, they endow planetary probes with the operational autonomy that is essential to overcome the challenges presented by space communications with Earth (long round-trip delays, limited bandwidth and connection times).

As such, advances in computer vision are the key to unlocking the full potential of terabytes of raw imagery that is being collected by orbiting and landed robotic missions. As space agencies direct their attention toward human landing on the Moon and continued robotic exploration of Mars, planetary mapping and modeling plays a pivotal role in astronaut training, landing site selection, and planetary probe navigation. The purpose of this track is to advance the current state of the art of 3D mapping, modeling and surface reconstruction and its wide range of applications.

Topics:

The topics of interest include but are not limited to the following areas:

- Stereo image processing
- Surface characterization
- Bundle adjustment
- Robust estimation methods
- Photoclinometry and photometric stereo reconstruction

- Statistical methods for 3D vision
- Surface reconstruction from uncalibrated images
- Multi-modal image reconstruction
- Camera calibration
- Computer vision applications for planetary probes, e.g. landing site selection, obstacle avoidance, autonomous navigation, hardware implementations & adaptation to operational constraints, testing and validation of systems, datasets and ground truth

Paper Submission Procedure:

Papers submitted to ISVC 2014 Special Track must not have been previously published and must not be currently under consideration for publication elsewhere. Manuscripts should be submitted in camera-ready format and should not exceed **12 pages**, including figures and tables (see http://www.isvc.net for details). All papers accepted will appear in the symposium proceedings which will be published by **Springer-Verlag** in the **Lecture Notes in Computer Science (LNCS)** series.

Important Dates:

Paper submissions	August 23, 2014
Notification of acceptance	October 7, 2014
Final camera ready paper	October 31, 2014
Advance Registration	October 31, 2014
ISVC14 Symposium	December 8-10, 2014

Organizers:

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