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ISPRS Congress Daily

HIGHLIGHTS

CATCON6 WINNERS | GALA | KEYNOTE PRESENTATIONS

Winners CATCON6 Contest

The Technical Commission WG VI/2 has organised the sixth Computer Assisted Teaching CONtest "CATCON 6" at the ISPRS Congress in Prague.

The winners of this contest are:
1. Learning Photogrammetry with Interactive Software Tool PhoX by Thomas Luhmann.

2. The e-foto Software: A free, Digital Photogrammetric Workstation for Educational Purposes by Jorge Luis Nunes e Silva Brito, et al.

3. GeoSquare: a collaborative online geospatial information sharing and geoprocessing platform for

education and research by Huayu Wu, et al.

The main objective of the contest is to promote the development and dissemination of effective, educational and user-friendly

- multimedia tutorials,
 - podcasts,
 - simulations and virtual environments,
 - information packages or data sets, and
 - application software
- designed and used specifically for computer assisted teaching (CAT) in photogrammetry, remote sensing or GIS.



The jury of the CATCON6 Contest.

In general, it is preferable for the CAT tutorial, software or data set to be non-commercial and provided to users without licence charges or other fees for non-profit use. Since many ISPRS attendees were interested in this contest at previous Congresses, this is a very

good opportunity to show the effectiveness and utility of your CAT product.

5 Questions to Lena Halounová



Lena Halounová.

The ISPRS Congress is in full swing. What was your experience of the first few days?

That the Congress Director had no time to attend the Congress parallel sessions and interactive sessions.

I would recommend the next one to read the papers during the reviewing process.

Back in 2012 Prague won the bid to host the 2016 ISPRS Congress. Any regrets?

No, not at all. I have met a lot of people I would have never met and I have visited many countries and exceptional places. All of that has given me a greater understanding of people from other countries around the world. It has helped me to understand their conditions and therefore their reactions, their behaviour, their feelings of happiness and sadness and many other issues.

What would you recommend to the organisers of the next edition?

That the preparation of the Congress will take up all their time. That it is a big challenge and responsibility, but that it is also fun and involves nice moments.

That they need hard-working, clever, flexible and innovative people around them.

That they should analyse all the comments from this Congress and use them as guidance in improving those things that were not good, acceptable, pleasant or useful here in Prague. I will try to collect them and deliver them to the new Congress Director.

What is your opinion about the current status of the photogrammetry and remote sensing community?

I think it is a great community coming from various branches - from the human body and health analyses to autonomous driving, from satellite observations to micro-image processing, from the Earth to space imagery collection and evaluation, and all in cooperation with the overbridging GIS community.

tion with the overbridging GIS community.

Is there anything else you want to share with the readers of the ISPRS Congress Daily?

I would like to ask and encourage people to make good use of all our instruments, tools and knowledge and to spread my wish to their colleagues and friends all over the world.



COLUMN

During recent years, the Remote Sensing Community has been paying more and more attention to the satellite SAR amplitude information, and ISPRS has made a significant contribution with the related research activities managed within the WG VI/2 - DEM Generation and Surface Deformation Monitoring from SAR Data.

As a matter of fact, SAR imagery amplitude was neglected for a while in favour of phase, due to the poor ground resolution. On the other hand, during the last few years, last generation satellite SAR sensors have been able to supply amplitude with a much better ground resolution, boosting scientific and technical interest for amplitude.

Starting from radargrammetry, investigations were developed regarding the potential for Digital Surface Model generations. A remarkable benefit of this approach is its full independence from the image coherence, hard to be satisfied with several land covers, but needed by the phase based interferometric approach.

Moreover, considering the high quality satellite orbits, SAR imagery was found to be capable of achieving 3D positioning accuracies of natural and man-made persistent scatterers at a few centimetres accuracy level in a global reference frame (so called Imaging Geodesy), therefore raising interest for possible monitoring applications, especially where fast and wide displacements are concerned.

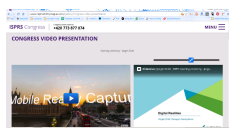
Now, interest has increased enormously, thanks to the free availability of the ESA Sentinel-1 imagery, opening an unprecedented opportunity to monitor the Earth's surface continuously at a 6-day rate.

Relevant prospects for the exploitation of Sentinel-1 amplitude information are strictly linked to the climate change monitoring, not only observing the morphological evolution of the cryosphere at polar caps, but also allowing the surface velocity field (linked to ice thickness) estimation at the level of a single glacier everywhere, using tracking techniques applied to SAR imagery. A completely new, free, global and continuous glacier velocities monitoring service could therefore soon become a reality.

A couple of months ago, NASA awarded the Italian team ICE-Cream the Galactic Impact worldwide prize for their L.I.V.E. Glacier Project, which proposed a very similar idea in the frame of the NASA Space Apps Challenge.

Mattia Crespi - University of Rome "La Sapienza" - ISPRS WG VI/2

Congress Presentations in Video



The presentations displayed online give a special experience like you are in the audience yourself! You can see the slides next to the live presentation.

Click on the Congress video presentation button on the homepage: isprs2016-prague.com. Be sure to have a look at them!

This ISPRS Congress is packed with information and you don't want to miss any of it! You can find full congress presentations of keynote lectures in HD video on the Congress website. More presentations will be added shortly.



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Keynotes Opened with Insights

Yesterday morning, three great keynote speakers opened the day, each of them drawing attention to a variety of subjects. Dr Cyril Stachniss talked about Flexible Navigation for Mobile Robots Operating in the Real World. She was followed by Tomas Pajdla on 3D Reconstruction from Photographs and Deren Li closed the session, highlighting the ever-important challenge of Big Data in Photogrammetry and Remote Sensing.

Cyril Stachniss, from the University of Bonn, Germany, talked about the complexity results from the high-dimensional perceptions, the large number of possible actions and the uncertainty about the state of the world. Probabilistic approaches offer ways of addressing these problems since they allow for explicitly modelling noise, for making decisions under uncertainty, and thus for acting robustly. In this talk, she presented recent approaches for solving different problems in the context of robot navigation and pointed out

the challenges to be addressed in order to build more flexible systems. This includes techniques for building maps of the environment and for relating built models with existing information sources. These are important capabilities for robots to be able to navigate robustly in dynamic environments and crowded city scenes. After the presentation, she expressed: It was a great experience talking in front of an interested audience about my own research. I really enjoyed the talk and the discussions that have been ongoing after the talk. I really believe that adding autonomy to technical systems is an important step for developing the next generation tools and measurement devices."

Tomas Pajdla, from the Czech Technical University in Prague, reviewed and demonstrated the main principles of 3D reconstruction from photographs. Challenges and opportunities were discussed and applications in photogrammetry, autonomous ro-

botics and consumer cameras were presented.

Deren Li, Wuhan University, China, closed the session by talking about key questions related to big data in photogrammetry, remote sensing, and geospatial information: how big are big data, how to treat these big data, and how to discover the patterns, rules and knowledge that can be obtained from big geospatial data. Three application examples were used to illustrate the value of big data in photogrammetry and remote sensing. The first example was in huge block adjustment without GCP for all of China. Using ZY-3 three-line CCD Data (8810 frame, 20TB) 3,000,000 robust tie points were automatically selected from two billion matched points for adjustment. The accuracy reached 3-5m, meeting global mapping needs at the 1:50,000 scale, while accurate three metre results can be reached when combined with GRASS data in block adjustment. The second example was night light remote sensing da-

ta analysis for socio-economic applications. The visible and near-infrared brightness of the earth's surface obtained by remote sensing satellites (such as DMSP, NPP) can be used to characterize the range of urban settlements, GDP, population distributions, and other socio-economic factors. Economic growth, urbanization, and humanitarian disasters are likely to be reflected in changes of brightness in remote sensing images over a period of time. A four-year image series shows that the Syrian civil war has led to a significant reduction



Deren Li.

(more than 80%) in the night light levels in Syria. On March 26, 2015, the United Nations Security Council released a briefing, citing this Syrian night time light research. A third example was automatic Video satellite data compression. This solution can send video satellite data direct to the end-user's Smartphone.

ITC Alumni Gathering



A large ITC delegation is attending this ISPRS 2016 Congress, together with Prof Dr Ir George Vosselman, Chairman of the Department of Earth Observation Science. On this occasion, they have pleasure in invit-

ing ITC alumni to attend an informal alumni gathering.

This will create an opportunity to meet old friends, ITC staff members and make contact with new friends and fellow ITC alumni. The event will be taking place on Sunday 17 July 2016 in the Zoom restaurant (2nd floor) of the Prague Congress Centre from 18.00 - 20.00 hrs.

If you have friends or contacts who are ITC alumni and who have not received/seen this invitation, please contact us so that we can ensure they are invited as well or forward the invitation

on yourself.

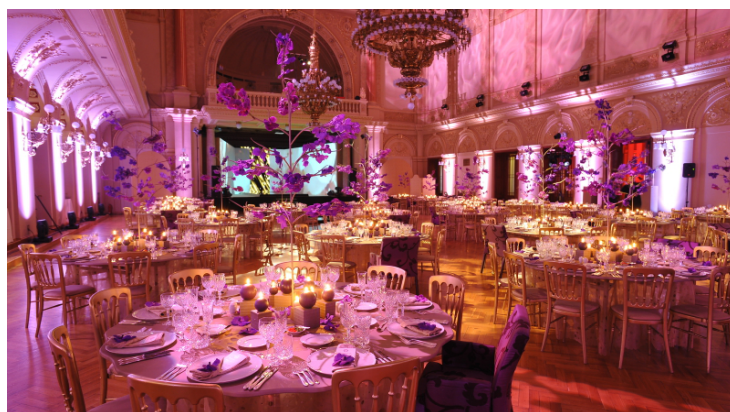
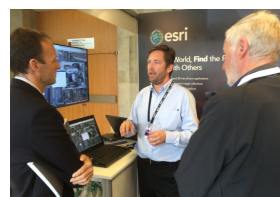
The event is free of charge, please RSVP to the staff members at the conference or to the ITC Alumni Office via e-mail: alumni-ipc@utwente.nl.

Everyday Reality Demonstrated

Yesterday was the last day of the exhibition on the second floor. Many businesses showed their products and services, allowing the congress visitors to touch the products and offer suggestions for improvements. Newly developed technologies ranging from data capture, photogrammetry, scanning from cars (Here and Hexagon/Leica Geosystems) were on display. As one of the exhibitors explained: "We are here to support the community and demonstrate the current state of technology. It's important to get in touch with the users."

The companies welcomed the at-

tention of the delegates, especially during the breaks between the sessions. Useful contacts have been made – advancing the profession and probably also contributing to the further development of the technology!



The Zofin Palace will be the location for the Gala Dinner.

Gala Evening

Be part of this glorious evening on a beautiful island in the very heart of Prague! The neo-Renaissance Zofin Palace, a famous architectural treasure, will once again be the location for the Congress Gala Dinner on Monday 18 July 2016 from 19.30 to 01.00. This unique venue is set in a venerable park with a panoramic view of Prague and its historical buildings. Its halls are magnificent and gloriously decorated, with original paintings and stucco work on the ceilings, and fitted with modern lighting, sound and projection technology and air conditioning.

The ISPRS Congress Organizers will try to do their best to prepare an unforgettable evening! You can expect a welcome drink, 3-course dinner menu, open bar with beer/ wine and soft drinks, entrance to all the halls in the Zofin Palace, a varied programme with a surprise, a separate lounge for quiet meetings, a live music band with a dance floor and an extra chill-out room in the Knight's hall.

Registration can be arranged at the reception; the costs are EUR150.