

Low Cost 3D

Sensors, Algorithms, Applications

2nd and 3rd December 2014

The workshop is part of the 3D Event Cluster Berlin

["berlin3d.net"](http://berlin3d.net)

Technische Universität Berlin

Straße des 17. Juni

10623 Berlin - Germany

Call for Papers, Presentations, Demonstrations

Technische Universität Berlin

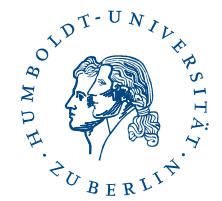
Department of Geodesy and Geoinformation Science

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Humboldt-Universität zu Berlin

Department of Computer Science, Computer Vision

Prof. Dr. rer. nat. Ralf Reulke



Workshop content

3D-reconstruction doesn't need to be expensive. David-Laserscanner, KINECT, Bundler and co. proof this. Embedded into the berlin3d.net cluster this workshop is a platform to present operations and application examples of different Low-Cost-3D reconstruction methods. Additionally there will be space for live demonstrations. This year we're pleased to announce a special session for Rapid Prototyping / 3D-printing for the first time.

Target audience

Researcher, developer and user of Low-Cost 3D reconstruction methods

Conference language

Conference delegates are asked to present their results in English

Schedule

Tuesday, 02.12.2014, 15:00 h: Demonstrations, LC3D-Challenge and Icebreaker-Party

Wednesday, 03.12.2014, 8:30 h: Lecture event

Call for Paper / Presentations

The organizing committee invites to present papers concerning the mentioned main topics. Please submit an abstract at first, the full paper after acceptance. Format templates for the contributions published in the proceedings: <http://www.isprs.org/documents/orangebook/app5.aspx>

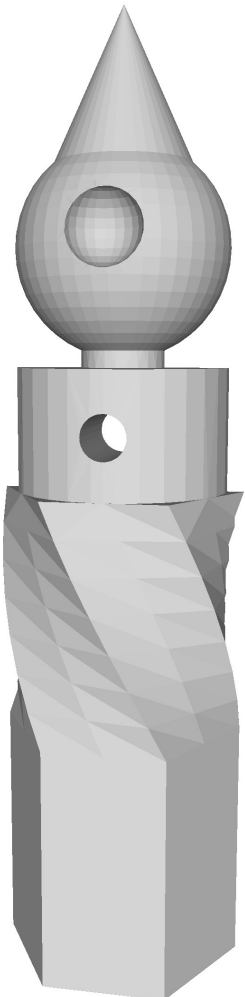
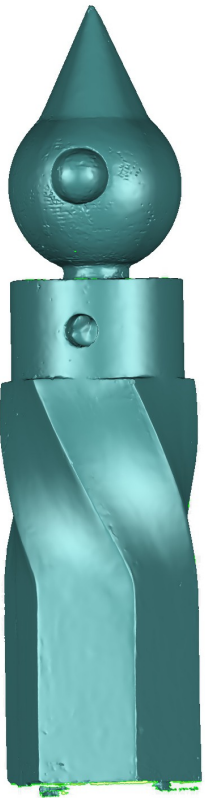
The conference volume will be published in electronic form. Selected and unpublished contributions will be issued within the established PFG journal, which is listed in the Thomson Reuters Journal Citation Reports® (JCR®). **Note that presentations without publication of an article are also welcome.**

Call for Demonstrations

We would like to invite the participants to present their systems in live demonstrations. Space for these demonstrations is available indoor and outdoor at TU Berlin. Please submit information about type, size and technical requirements of your demonstration.

Call for participation in the LC3D-Challenge

We give you the opportunity to convince the LCD-community of the quality of your reconstruction process. The aim of the LC3D-challenge is to reconstruct the geometry of two test objects, whereas one can be chosen, within a given time frame. The first test object has been accurately machined and features no surface contrast. Hence participants need to find ways to overcome this circumstance whereas projective and physical methods to provide contrast are conceivable. Deliverables of the challenge are a **metric** 3D point cloud or mesh as well as a short report that features derived properties of the test object e.g. diameter and roundness of a spherical part. The second test body is a textured copy of the bust of Nefertiti* which is depicted on the left. A committee consisting of participants and organisers will judge the outcome of the reconstruction under various aspects such as achieved accuracy, meaningful quality measures, point density, efficiency or ingenuity. In order to transparently judge the outcome reference measurements will be carried out on site by applying a structured light scanner. Furthermore a superior coordinate system will be provided to avoid undesired effects caused by the transformation method e.g. the ICP algorithm. Two types of tie points will be within the scene in order to determine transformation parameters and scale: Circular photogrammetric targets (2D) or white spherical targets with a diameter of 40 mm (3D). For more information on the test bodies and the Challenge contact Daniel Wujanz (daniel.wujanz@tu-berlin.de).





Call for Poster Presentations

In order to encourage students in participating in scientific events a poster session will be introduced. Students whose posters are accepted are invited to participate at the LC3D conference at no charge. A guideline for poster presentations can be found under <http://www.isprs.org/documents/orangebook/app6.aspx>. Note that the format should be A0.

Topics

Sensors

- Current developments
- Operation mode, calibration, accuracy assessment etc.

Algorithms

- SIFT, SLAM, bundle adjustment etc.
- Software: Bundler, CMVS, PMVS2, Visual SfM, etc.
- Webservices: Photosynth, ARC3D, 123D catch etc.

Applications

- Static and kinematic applications
- Rapid Prototyping / 3D-printing
- Special fields of application
 - Entertainment
 - User control
 - 3D reconstruction
 - Advanced driver assistance systems
 - Medical diagnostics
 - Quality control
 - etc.

Deadlines

Abstract submission (paper / presentation) until **15.09.2014**

Abstract submission (demonstration) until **15.11.2014**

Notification of acceptance until **03.11.2014**

Paper submission until **02.12.2014**

Registration fee

The participation fee adds up to 90,00 €.

Reduced fee for enrolled students 50,00 €.

For registrations, after 24.11.2014 a late booking fee of 20€ is applicable.

The registration fee contains the following:

- Live demonstrations and icebreaker party, incl. drinks, and snacks
- Lecture event
- Presentation slides and articles in electronic form

Registration and further information

<http://www.lc3d.net/>

Event-note berlin3d.net

4th and 5th December 2014: 3D-NordOst: www.3d-nordost.de

* Copy of the Bust of Queen Nefertiti, New Kingdom, 18th dynasty ca. 1340 BCE, Egyptian Museum and Papyrus Collection, National Museums Berlin. Unauthorised external use is strictly prohibited.

Directions

The conference will be hosted at TU's main building (**Hauptgebäude H**) located in close range to Zoologischer Garten and Ernst-Reuter-Platz at **Strasse des 17. Juni 135, 10623 Berlin-Charlottenburg**. A map of the entire campus can be found under <http://www.tu-berlin.de/?id=3244>.

By train

At Central station take a regional train or S-Bahn (any line in direction of Charlottenburg, Westkreuz, Potsdam or Spandau) to Zoologischer Garten. The main campus is only a five minute walk from Zoologischer Garten railway station. You can also take a bus (M45, 245 oder X9) or the U-Bahn (Line 2) to Ernst Reuter Platz (or you can stop a taxi and take a fixed rate short ride from Zoologischer Garten).

By plane

From Airport Tegel The airport is very close to the Main Campus. Take the airport shuttle bus (X9) to Ernst-Reuter Platz (15 minutes) or take a taxi. (**10 min.**)

From Airport Schönefeld This is across the city, so a taxi is expensive unless you can share the costs. At S-Bahnhof Flughafen Schönefeld take a regional train (RE7, destination Dessau) or S-Bahn (Line 9, destination Pankow, change at Ostkreuz to any train in direction of Zoologischer Garten). Leave the train at Zoologischer Garten. From there you can walk down Hardenbergstrasse (five minutes), take a bus (M45, 245, or X9), or take the U-Bahn (Line 2, destination Ruhleben) one station to Ernst Reuter Platz. (Or you can stop a taxi and take a fixed rate short ride)..

Take a 171 or X7 bus to the underground station Rudow and from there take the Line 7 (destination Rathaus Spandau) to Bismarckstrasse, then change onto the Line 2 (destination Pankow) and travel two stops to Ernst Reuter Platz.

Both options take about an hour.

