Devrim AKCA

Personal Data

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Research Interest

Photogrammetry
Laser scanning
Optical Remote Sensing
Computer and machine vision
Camera calibration
High accuracy object measurement and 3D modeling
3D city modeling,
3D modeling of cultural and natural heritage objects & sites
Structured light and laser scanning systems
Least Squares image and 3D point cloud co-registration
E-learning
Geo-Information technologies
Geographical Information Systems (GIS)

Education

Ph.D. (Dr. sc. ETH Zürich) 01.2003 – 03.2007	Swiss Federal Institute of Technology (ETH), Zurich, Switzerland Institute of Geodesy and Photogrammetry (IGP) **Ph.D. in Photogrammetry and Remote Sensing (Dr. sc. ETH Zurich)** Thesis: Least Squares 3D Surface Matching.

Ph.D. (not finalized) 10.2000 – 12.2002	Istanbul Technical University, Istanbul, Turkey Institute of Science and Technology Division of Photogrammetry Topic: Acquisition and Evaluation of Laser Scanner Data.
Master Degree 10.1997 – 02.2000	Karadeniz Technical University, Trabzon, Turkey Graduate School of Natural and Applied Sciences **M.Sc. in Division of Geodesy and Photogrammetry Engineering** Thesis: Modeling environmental data using GIS: Case study of Trabzon - Degirmendere Valley.
Bachelor Degree 10.1993 – 07.1997	Karadeniz Technical University, Trabzon, Turkey Faculty of Engineering and Architecture **B.Sc. in Department of Geodesy and Photogrammetry Engineering.**
Technician Degree 10.1989 – 07.1993	Anatolian Land Registry and Cadastre High School, Ankara, Turkey Cadastre Technician.

Work Experience

Assoc. Prof. Dr. 03.2014 – present	Isik University, Istanbul, Turkey Faculty of Engineering Department of Civil Engineering.
Assist. Prof. Dr. 09.2011 – 03.2014	Isik University, Istanbul, Turkey Faculty of Engineering Department of Civil Engineering.
Assist. Prof. Dr. 09.2009 – 09.2011	Isik University, Istanbul, Turkey Faculty of Arts and Sciences Department of Information Technologies.
Senior Research Assoc. 05.2007 – 08.2009	Swiss Federal Institute of Technology (ETH), Zurich, Switzerland Institute of Geodesy and Photogrammetry (IGP) Chair of Photogrammetry and Remote Sensing (PF) - Worked for project “quality assessment of 3D building data” - Worked for project “Evaluation of metric accuracy potential of mobile phone cameras” - Participated in other projects - Developed methods and software - Participated in teaching - Supervised bachelor and master thesis.
Research Assistant 01.2003 – 05.2007	Swiss Federal Institute of Technology (ETH), Zurich, Switzerland Institute of Geodesy and Photogrammetry (IGP) Chair of Photogrammetry and Remote Sensing (PF) - Research assistant in Photogrammetry and Remote Sensing - Developed methods and software for 3D surface matching, camera calibration, image processing, quality assessment, data fusion - Participated in several projects - Supervised bachelor and master thesis.
Academic Guest 05.2002 – 01.2003	Swiss Federal Institute of Technology (ETH), Zurich, Switzerland Institute of Geodesy and Photogrammetry (IGP) Chair of Photogrammetry and Remote Sensing (PF) - Worked for the project “Re-Sequencing a Historical Palm Leaf Manuscript”.
Research Assistant 12.2001 – 05.2002	Istanbul Technical University, Istanbul, Turkey Department of Geodesy and Photogrammetry Division of Photogrammetry - Developed methods and software for camera calibration, image matching, bundle adjustment.
Teaching Assistant	Ondokuz Mayis University, Samsun, Turkey

05.2000 – 12.2001	Department of Geodesy and Photogrammetry - Teaching and research assistant in geodesy and photogrammetry - Assisted several undergraduate courses.
Surveying Engineer 12.1997 – 05.2000	General Directorate of Land Registry and Cadastre (TKGM), Turkey Cadastre Office, Macka (Trabzon) - Managed and controlled ordinary cadastre works - Planned, established, measured and adjusted terrestrial triangulation networks.
Cadastre Technician 07.1993 – 11.1993	General Directorate of Land Registry and Cadastre (TKGM), Turkey Cadastre Office, Yenice (Zonguldak) - Performed ordinary cadastre works.

Awards

- The ISPRS Prize for Best Papers by Young Authors, 20th ISPRS Congress, 2004.
- The Silver Medal of ETH Zurich – Distinction of the Doctoral Thesis, 2008.
- Carl Pulfrich Award, 2009.
- Publons Peer Review Awards 2017 – Top 1 % of peer reviewers in Earth and Planetary Sciences
- Publons Peer Review Awards 2018 – Top 1 % of reviewers in Geosciences

Honors

- Honorary degree in B.Sc. graduation (first rank of the department, CGPA: 3.43 / 4.00), Karadeniz Technical University, Turkey, 1997.
- Doctoral fellowship, Scientific and Technical Council of Turkey (TUBITAK), 2001-2002.
- Listed in Marquis “Who’s Who in Science and Engineering”, 9th Edition, 2006-2007.
- Listed in Marquis “Who’s Who in the World”, 25th Edition, 2008.
- Certificate of Outstanding Contribution in Reviewing
  – ISPRS Journal of Photogrammetry and Remote Sensing, 2014.
- Certificate of Outstanding Contribution in Reviewing
  – ISPRS Journal of Photogrammetry and Remote Sensing, 2016.
- Certificate of Excellence in Reviewing
  – ISPRS Journal of Photogrammetry and Remote Sensing, 2016.

Board Memberships

- Editorial Board Member of MDPI **Remote Sensing** Journal, since 2008.
  http://www.mdpi.com/journal/remotesensing/editors
-
- Editorial Board Member of the **Harita Teknolojileri Elektronik Dergisi** (in Turkish), since 2010.
- Editorial Board Member of the **Journal of Geodesy and Geoinformation**, since 2012.
  http://www.hkmodergi.org/jgg/index.php
- Editorial Advisory Board Member of the **ISPRS Journal of Photogrammetry and Remote Sensing**, since 2016.
  http://www.journals.elsevier.com/isprs-journal-of-photogrammetry-and-remote-sensing/editorial-board
- Editorial Board Member of MDPI **Heritage** Journal, since 2017.
  http://www.mdpi.com/journal/heritage/editors
- Advisory Board Member of MDPI **Sci** Journal, since 2018.
  http://www.mdpi.com/journal/sci/editors

Association Memberships

- Society of Graduates of Land Registry and Cadastre High School, since 1993.
- Chambers of Mapping and Cadastre Engineers, Turkey, since 1997.
- National Commission of Geodesy, Turkey, since 2002.
- American Society for Photogrammetry and Remote Sensing (ASPRS), 2006 – 2017.
- Swiss Society for Photogrammetry Image Analysis and Remote Sensing (Schweizerische Gesellschaft für Photogrammetrie Bildanalyse und Fernerkundung – SGPBF), since 2009.

Other Memberships

- Member of the ISPRS WG III/3 Processing of point clouds from laser scanners and other sensors, term 2004-2008.
- Member of the ISPRS WG V/3 Terrestrial laser scanning, term 2004-2008.
- Member of the ISPRS WG III/2 Point cloud processing, term 2008-2012.
- Member of the ISPRS WG V/3 Terrestrial laser scanning and 3D imaging, term 2008-2012.
- Member of the ISPRS WG V/2 Cultural heritage data acquisition and processing, term 2008-2012.

Courses and Certificates

- Gründung eines Kleinunternehmens (Foundation a small business company), Business Tools AG, Zurich, 2008.
- Career Planning Workshop, ETH Zurich, Zurich, 2008.
- Finanzielle Führungsinstrumente (Financial management tools), Business Tools AG, Zurich, 2008.

Language Skills

- Native language Turkish
- Foreign languages English (advanced), German (basic).

Computer Skill

- Software development C/C++, C++Builder IDE, OpenGL, VTK (Visualization Toolkit)
- Operating systems MS Windows, UNIX, Ubuntu Linux.
- Application software ArcInfo GIS (ESRI), AutoCAD, OPTOCAT, Geomagic Studio, PolyWorks, Blender, NetCAD, LPS - Leica Photogrammetric Suite.

Teaching Activities

Teaching at ETH Zurich

- 2007/2008 Spring semester, Photogrammetry and Machine Vision.
- 2007/2008 Spring semester, Close-range Photogrammetry.
- 2008/2009 Spring semester, Photogrammetry and Machine Vision.
- 2008/2009 Spring semester, Close-range Photogrammetry.

Teaching at Isik University

- IT101 Introduction to Computing.
- IT202 Data Structures and Algorithms.
- IT305 Computer Organization.
- IT486 Geographical Information Systems (GIS).
- MATH103 Mathematics I.
- CSE101 Introduction to Programming.

- CE171 Computer Aided Technical Drawing.
- CE231 Geology.
- CE232 Surveying.
- CE239. Earthworks.
- MATH234 Applied Probability and Statistics for Engineers.

Supervised Theses

- An E-learning software for digital monoplotting, M.Sc. thesis by Matthias Flühler, Institute of Geodesy and Photogrammetry, ETH Zurich, 2004.
- 3D object modeling by use of a close range active sensor, B.Sc. thesis by David Novak, Institute of Geodesy and Photogrammetry, ETH Zurich, 2006.
- Untersuchung verschiedener Methoden zur Registrierung von Punktwolken, B.Sc. thesis by Thomas Pfarrwaller, Institute of Geodesy and Photogrammetry, ETH Zurich, 2006.
- Total least squares registration of 3D point clouds, Ph.D. thesis by Umut Aydar, Dept. of Geodesy and Photogrammetry, Istanbul Technical University, 2014.
- Real-time photogrammetric monitoring of bridges, Ph.D. thesis by Emin Özgür Avşar, Dept. of Geodesy and Photogrammetry, Istanbul Technical University, 2014.

Main Projects

- **Re-Sequencing a Historical Palm Leaf Manuscript,**
  in cooperation with Museum Rietberg Zürich (Switzerland), finished project.
  A stack of 66 historical Indian palm leaves, which were produced in the 8th Century AD, is kept in the Museum Rietberg, Zuerich. The original sequence of the leaves was lost long time ago. At one point in history, the stack of the leaves was damaged by a mouse biting pieces off. Only the first 18 leaves have their pages numbered in Sanskrit language, but the rest of them got out of order. The project aims to recover the original sequence.
  http://www.photogrammetry.ethz.ch/research/palmleaf/

- **Automated Registration and Evaluation of Laser Scanner Point Clouds and Images,**
  funded by an ETHZ Research Grant (TH Project number: 13./04-1), finished project.
  This project proposes a least squares 3D surface matching method that uses the whole information content of data instead of some distinct features only. The method estimates the 3D transformation parameters of one or more 3D search surfaces to a 3D template surface, minimizing the sum of the squares of the Euclidean distances between the surfaces using the Generalized Gauss-Markoff model.
  A paper of the project was awarded by **the ISPRS Prize for Best Papers by Young Authors**, 20th ISPRS Congress, Istanbul, 2004.
  http://www.photogrammetry.ethz.ch/research/pointcloud/

- **Filling the Data Holes of SRTM C-Band DEMs by use of the Least Squares 3D Surface Matching (LS3D),**
  in cooperation with the Swissphoto AG (Switzerland) and Jeppesen (Denver, USA), finished project.
  The project aims to fill the data holes on the SRTM C-DEM products by use of the local DEMs wherever they are available in any resolution and characteristic. The developed LS3D surface matching method corrects the translational and rotational differences between the C-DEMs and the local DEMs.
  http://www.photogrammetry.ethz.ch/research/srtm/

- **3D Modeling of the Weary Herakles Statue in Antalya, Turkey,**
  in cooperation with the Breuckmann GmbH (Germany), finished project.
  A Herakles statue, named “Weary Herakles” and located in the Antalya Museum, Turkey was

scanned by a Breuckmann optoTOP-HE system. The work comprises the essential steps of the 3D object modeling pipeline, i.e. digitization, registration, surface triangulation, editing, texture mapping and visualization.
http://www.photogrammetry.ethz.ch/research/herakles/

- **Quality Assessment of 3D Building Data,**
in cooperation with the Ordnance Survey Research (UK), finished project.
The project aims to derive methods to calculate metrics for the quantitative evaluation of 3D buildings, which are assumed to be basic elements of a given 3D city model. To be developed metrics and methods aree independent of the method of data capture.
https://www.rdb.ethz.ch/projects/project.php?proj_id=20466

- **Mobile Photogrammetry,**
funded by the own resources of the professorship, finished project.
This project examines the potential of mobile phones to be used as a front-end sensor for photogrammetric procedures and applications. The metric and radiometric accuracy potential of recent mobile phone cameras are investigated and compared with respect to two off-the-shelf digital still video.
https://www.rdb.ethz.ch/projects/project.php?proj_id=20467

- **Photogrammetric Documentation of Alois Payer's Art Studio in einsiedeln, Switzerland,**
in cooperation with the Institute of Historic Building Research and conservation of ETH Zurich, finished project.
The project concentrates on digital close-range photogrammetry to be used for quick documentation of natural and cultural heritage objects, given the specific example of Alois Payer's art atelier in Einsiedeln, Switzerland.

- **TRAMM - Triggering of Rapid Mass Movements in Steep Terrain,**
in cooperation with the Institute for Geotechnical Engineering of ETH Zurich and Swiss Federal Research Institute WSL, finished project.
The primary focus of this research poly-project is on enhancing understanding of triggering and initiation mechanisms, including the transition from slow to fast mass movement processes, and flow characteristics of such catastrophic mass movements. We will study the roles of heterogeneity and criticality of hydro-mechanical hill-slope processes on the onset of snow avalanches, landslides, and debris flows whose movements are observed and quantified by use of the photogrammetry. .
http://www.cces.ethz.ch/projects/hazri/tramm/

- **Point Error Model Development and Anisotropic Surface Generation for 3D Point Clouds,**
funded by TUBITAK (The Scientific and Technological Research Council of Turkey) project ID: 115Y239, finished project (2015-2017).
A generic and practical methodology is presented for 3D surface mesh generation from the Terrestrial Laser Scanner (TLS) derived point clouds. It has two main steps. The first step deals with developing an anisotropic point error model, which is capable of computing the theoretical precisions of 3D coordinates of each individual point in the point cloud. The magnitude and direction of the errors are represented in the form of error ellipsoids. The following second step is focused on the stochastic surface mesh reconstruction. It exploits the previously determined error ellipsoids by computing a point-wise quality measure, which takes into account the semi-diagonal axis length of the error ellipsoid. The points only with the least errors are used in the surface triangulation.
http://tls-mesher.com/

Other Projects and Activities

- **Development of an Educational Software System for the Digital Monoplotting,**
funded by the own resources of the professorship, finished project.
The aim of this project is to develop a user-friendly windows-based educational software system for explanation and demonstration of the procedure of digital monoplotting. The program should

primarily be used by teaching personel in lectures to bring over this particular topic of photogrammetry to master students in an attractive way.
Awarded by **the Silber Award at the CATCON Compitition** at the XXth ISPRS Congress in Istanbul, 2004.
http://www.photogrammetry.ethz.ch/research/student/monoplotting.html

- **3D Modeling of the pre-Inca site Pinchango Alto (Peru) with terrestrial laserscanning and UAV images,**
  in cooperation with Riegl Laser Measurement Systems (Austria), Helicam (Switzerland), and the German Institute of Archaeology, Commission for General and Comparative Archaeology (KAVA) in Bonn (Germany), finished project.
  The project aims to investigate the applicability of the modern surveying techniques to archaeological documentation studies. Two systems, a terrestrial laser scanner and a UAV (Unmanned Aerial Vehicle) system, were employed for the documentation of the pre-Inca site Pinchango Alto (Peru).
  http://www.photogrammetry.ethz.ch/research/pinchango/

- **3D Modeling of a Khmer head in Museum Rietberg Zurich,**
  in cooperation with Museum Rietberg Zürich (Switzerland), finished project.
  This project aims to model the Khmer head sculpture, which is in the collection of Museum Rietberg Zurich (Switzerland), by using an structured light system.
  Awarded by the **Nachwuchsförderpreises für Photogrammetrie, Fernerkundung und Geoinformation - in Memoriam Prof. Dr. Karl Kraus**, 2. Preis, Dreilaendertagung 2007 der SGBPF, DGPF, OVG, in Muttenz (Switzerland).
  http://www.photogrammetry.ethz.ch/research/khmer/

- **Calibration and Validation of ALOS/PRISM Images and Products,**
  in cooperation with the Japan Aerospace Exploration Agency (JAXA) and GAEL Consultant (France) of ESA/ESRIN, finished project.
  Prof. Dr. A. Grün is a Member of the Calibration / Validation Team and Principal Investigator for JAXA's ALOS/PRISM mission. Within this mission, following two tasks have been completed: orientation and calibration of ALOS/PRISM sensor through self-calibration, and validation of ALOS/PRISM images and products through DSM generation.
  http://www.photogrammetry.ethz.ch/research/ALOS/

- **3D Modeling of Alfred Escher Statue in Zurich,**
  in cooperation with the Credit Suisse (Switzerland), finished project.
  Because of the 125 anniversary of the construction of the Gotthard Tunnel (Switzerland), Credit Suisse has decided to have an exhibition in Zurich about the life and person of Alfred Escher (1819-1882), Swiss politician, promoter of the Gotthard Tunnel, railroad entrepreneur, and founder of Credit Suisse as well as of ETH Zurich. The goal of the project is the production of ten physical replicas of the Escher monument (standing in front of the main railway station of Zurich), starting from a 3D computer model.
  http://www.photogrammetry.ethz.ch/research/escher/

Publications

In Books

1. Akça, D., 2000. Coğrafi Bilgi Sistem ile çevresel verilerin modellenmesi: Trabzon Değirmendere Vadisi örneği. Yüksek Lisans Tezi, Kardeniz Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Trabzon, sayfa 1-146, (M.Sc. thesis, in Turkish).

2. Akca, D., 2007. Least Squares 3D surface matching. Ph.D. thesis, Institute of Geodesy and Photogrammetry, ETH Zurich, Switzerland, ISBN 3-906467-63-5, Mitteilungen Nr.92, 78 pages. **The Silver Medal of ETH Zurich - Distinction of the Doctoral Thesis**.

3. Akca, D., Gruen, A., 2008. Photogrammetric Documentation of Alois Payer's Art Studio. In: Institut für Denkmalpflege und Bauforschung der ETH Zürich (Ed.), Methoden eines Ad-hoc-Inventars. Das Künstleratelier Payer & Wipplinger in Einsiedeln. ISBN 978-3-7281-3244-4, vdf Hochschulverlag AG an der ETH Zürich, pp. 15-23.

In Journals

1. Akça, D., ve Doğan, S., 2002. Sayısal görüntülerde Ana Bileşenler Dönüşümü. Harita Dergisi, sayı 129, sayfa 1-15, (in Turkish).

2. Gruen, A., Akca, D., 2005. Least squares 3D surface and curve matching. ISPRS Journal of Photogrammetry and Remote Sensing, 59 (3), 151-174.

3. Akca, D., 2007. Matching of 3D surfaces and their intensities. ISPRS Journal of Photogrammetry and Remote Sensing, 62 (2), 112-121.

4. Akca, D., Gruen, A., 2009. Radiometric performance analysis of mobile phone cameras. Asian Journal of Geoinformatics, 9 (1), 3-8.

5. Akca, D., Gruen, A., 2009. Comparative geometric and radiometric evaluation of mobile phone and still video cameras. The Photogrammetric Record, 24 (127), 217 – 245.

6. Akca, D., 2010. Co-registration of surfaces by 3D Least Squares matching. Photogrammetric Engineering and Remote Sensing, 76 (3), 307 – 318.

7. Seybold, H.J., Molnar, P., Akca, D., Doumi, M., Cavalcanti Tavares, M., Shinbrot, T., Andrade Jr., J.S., Kinzelbach, W. Herrmann, H.J., 2010. Topography of inland deltas: Observations, modeling, and experiments. Geophysical Research Letters, 37 (8), L08402, 5 pages.

8. Akca, D., Freeman, M., Sargent, I., and Gruen, A., 2010. Quality assessment of 3D building data. The Photogrammetric Record, 25(132), 339-355.

9. Mano, K., Ishii, K., Hirao, M., Tachibana, K., Yoshimura, M., Akca, D., and Gruen, A., 2012. A Study on Accuracy Investigation of Point Clouds Generated by the Mobile Mapping System (MMS). Journal of the Japan Society of Photogrammetry and Remote Sensing, 51(4), 186-200.

10. Akca, D., 2012. 3D modelling of cultural heritage objects with a structured light system, Mediterranean Archaeology and Archaeometry, 12(1), 139 – 152.

11. Akca, D., 2013. Photogrammetric monitoring of an artificially–generated shallow landslide. The Photogrammetric Record, 28(142), 178-195.

12. Avsar, E.Ö., Altan, M.O., Dogan, Ü.A., Akca, D., 2015. Determining pull-out deformations by means of an online photogrammetry monitoring system. International Journal of Environment and Geoinformatics, 2(1), 54-61.

13. Akca, D., Seybold, H.J., 2016. Monitoring of a laboratory-scale inland-delta formation using a structured-light system. The Photogrammetric Record, 31 (154), 121-142.

14. Askarinejad, A., Akca, D., Springman, M., 2018. Precursors of instability in a natural slope due to rainfall: a full-scale experiment. Landslides, 15 (9), 1745-1759.

In Proceedings

1. Yomralıoğlu, T., ve Akça, D., 1999. Çevresel Bilgi Sistemleri için model-altlık tasarımı: Trabzon Değirmendere Havzası örneği. Yerel Yönetimlerde Kent Bilgi Sistemi Uygulamaları Sempozyumu, Trabzon, 13-15 Ekim, sayfa 297-306, (in Turkish).

2. Akca, D., 2003. Full automatic registration of laser scanner point clouds. In: Gruen, A., Kahmen, H. (Eds.), Optical 3-D Measurement Techniques VI, Zurich, Switzerland, September 22-25, vol. I, pp. 330-337.

3. Akca, D., Gruen, A., 2003. Re-sequencing a historical palm leaf manuscript with boundary-based shape descriptors. 19th CIPA International Symposium, Antalya, Turkey, September 30-October 4. International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, vol. XXXIV, part 5/C15, pp. 55-60.

4. Gruen, A., Akca, D., 2004. Least squares 3D surface matching. ISPRS "Panoramic Photogrammetry Workshop", Dresden, Germany, February 19-22. International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, vol. XXXIV, part 5/W16 (on CD-ROM).

5. Akca, D., 2004. A new algorithm for 3D surface matching. 20th ISPRS Congress, Istanbul, Turkey, July 12-23. International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, vol. XXXV, part B7, pp. 960-965. **The ISPRS Award for the Best Papers by Young Authors.**

6. Akca, D., Gruen, A., 2005. A flexible mathematical model for matching of 3D surfaces and attributes. Videometrics VIII, Proc. of SPIE-IS&T Electronic Imaging, San Jose (California), USA, January 18-20. Proc. of SPIE, vol. 5665, pp.184-195.

7. Gruen, A., Akca, D., 2005. Least squares 3D surface matching. ASPRS 2005 Annual Conference, Baltimore (Maryland), USA, March 7-11 (on CD-ROM).

8. Akca, D., 2005. Registration of point clouds using range and intensity information. International Workshop on Recording, Modeling and Visualization of Cultural Heritage, Ascona, Switzerland, May 22-27, E. Baltsavias, A. Gruen, L. Van Gool, M. Pateraki (Eds.), Taylor & Francis/Balkema, Leiden, pp. 115-126.

9. Fluehler, M., Niederoest, J., Akca, D., 2005. Development of an educational software system for the digital monoplotting. ISPRS Workshop on "Tools and Techniques for E-Learning", Potsdam, Germany, June 1-3. International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, vol. XXXVI, part 6/W30 (on CD-ROM).

10. Akca, D., Gruen, A., 2005. Fast correspondence search for 3D surface matching. ISPRS Workshop Laser scanning 2005, Enschede, the Netherlands, September 12-14. International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, vol. XXXVI, part 3/W19, pp. 186-191.

11. Akca, D., Gruen, A., 2005. Recent advances in least squares 3D surface matching. In: Gruen, A., Kahmen, H. (Eds.), Optical 3-D Measurement Techniques VII, Vienna, Austria, October 3-5, vol. II, pp. 197-206.

12. Akca, D., Gruen, A., Alkis, Z., Demir, N., Breuckmann, B., Erduyan, I., and Nadir, E., 2006. 3D modeling of the Weary Herakles statue. 5th International Symposium Turkish-German Geodetic Days, Berlin, March 28-31, (only on CD-ROM).

13. Akca, D., Gruen, A., Alkis, Z., Demir, N., Breuckmann, B., Erduyan, I., and Nadir, E., 2006. 3D modeling of the Weary Herakles statue with a coded structured light system. ISPRS Commission V Symposium, Dresden, September 25-27. International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, vol. XXXVI, part 5, pp. 14-19.

14. Zhang, L., Kocaman, S., Akca, D., Kornus, W., and Baltsavias, E., 2006. Test and performance evaluation of DMC images and new methods for their processing. ISPRS Commission I Symposium, Paris, July 3-6, (only on CD-ROM).

15. Akca, D., Remondino, F., Novàk, D., Hanusch, T., Schrotter, G., and Gruen, A., 2006. Recording and modeling of cultural heritage objects with coded structured light projection systems. 2nd International Conference on Remote Sensing in Archaeology, Rome, Italy, December 4-7, pp.375-382.

16. Akca, D., Remondino, F., Novàk, D., Hanusch, T., Schrotter, G., and Gruen, A., 2007. Performance evaluation of a coded structured light system for cultural heritage applictions. Videometrics IX, Proc. of SPIE-IS&T Electronic Imaging, San Jose (California), USA, January 29-30, SPIE vol. 6491, pp. 64910V-1-12.

17. Gruen, A., and Akca, D., 2007. Mobile Photogrammetry. Dreiländertagung SGPBF, DGPF und OVG, Muttenz, Switzerland, June 19-21, DGPF Tagungsband 16 / 2007, pp. 441-451.

18. Baltsavias, E., Eisenbeiss, H., Akca, D., Waser, L.T., Küchler, M., Ginzler, C. and Thee, P., 2007. Modeling fractional shrub/tree cover and multi-temporal changes using high-resolution digital surface models and CIR-aerial images. Dreiländertagung SGPBF, DGPF und OVG, Muttenz, Switzerland, June 19-21, DGPF Tagungsband 16 / 2007, pp. 287-297.

19. Akca, D., 2007. Least squares matching of 3D surfaces. 4th Symposium of Turkish Society for Photogrammetry and Remote Sensing, Istanbul, Turkey, June 5-7, (only on CD-ROM).

20. Akca, D., Gruen, A., Breuckmann, B., and Lahanier, C., 2007. High definition 3D-scanning of arts objects and paintings. In: Gruen, A., Kahmen, H. (Eds.), Optical 3-D Measurement Techniques VIII, Zurich, Switzerland, July 9-12, vol. II, pp. 50-58.

21. Baltsavias E., Kocaman S., Akca D., and Wolff K., 2007. Geometric and Radiometric Investigations of Cartosat-1 Data. ISPRS Hannover Workshop 2007, "High Resolution Earth Imaging for Geospatial Information", Hannover, Germany, May 29- June 1, (on CD-ROM).

22. Akca, D., Gruen, A., 2007. Generalized Least Squares multiple 3D surface matching. ISPRS Workshop on Laser Scanning 2007 and SilviLaser 2007, Espoo, Finland, September 12-14. International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, vol. XXXVI, part 3 / W52, pp. 1-7.

23. Akca, D., Gruen, A., 2007. Simultaneous co-registration and georeferencing of multiple pointclouds. 28th Asian Conference on Remote Sensing (ACRS'07), Kuala Lumpur, Malaysia, November 12-16 (only on CD-ROM).

24. Gruen, A., Akca, D., 2007. Calibration and accuracy testing of mobile phone cameras. 28th Asian Conference on Remote Sensing (ACRS'07), Kuala Lumpur, Malaysia, November 12-16 (only on CD-ROM).

25. Gruen, A., and Akca, D., 2008. Evaluation of metric performance of mobile phone cameras. International Calibration and Orientation Workshop EuroCOW 2008, Castelldefels, Spain, January 30 - February 1 (only on CD-ROM).

26. Akca, D. and Gruen, A., 2008. Co-registration of pointclouds by 3D Least Squares matching. The International LIDAR Mapping Forum, Denver, Colorado, US, February 21-22 (only on CD-ROM).

27. Gruen, A., and Akca, D., 2008. Evaluation of the metric performance of mobile phone cameras. 6th International ARIDA (Association for Real Time Imaging and Dynamic Analysis) Workshop "Innovation in 3D measurement, modeling and visualization", Trento, Italy, February 25-26 (only on CD-ROM).

28. Akca, D., Freeman, M., Gruen, A., and Sargent, I., 2008. Quality assessment of 3D building data by 3D surface matching. 21th ISPRS Congress, Beijing, China, July 3-11. International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, vol. XXXVII, part B2, pp. 771-777.

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