



ASSIST. PROF. DR. DEVRİM AKÇA
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1. **Name** : Devrim AKCA
2. **Birth date** : 1975
3. **Academic title** : Yrd. Doç. Dr.
4. **Education :**

DATES	DEGREE	UNIVERSITY	DEPARTMENT
1993-1997	B.Sc.	Karadeniz Technical University	Geodesy and Photogrammetry Engineering
1997-2000	M.Sc.	Karadeniz Technical University	Geodesy and Photogrammetry Engineering
2003-2007	Ph.D.	ETH Zurich	Photogrammetry

5. Academic Titles

YEAR	TITLE	UNIVERSITY	DEPARTMENT
2009	Assist. Prof.	Işık University	Information Technologies

6. Supervised MS and PhD Theses

6.1. MS Theses

- 1) An E-learning software for digital monoplotting, M.Sc. thesis by Matthias Flühler, Institute of Geodesy and Photogrammetry, ETH Zurich, 2004.
- 2) 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.
- 3) Untersuchung verschiedener Methoden zur Registrierung von Punktwolken, B.Sc. thesis by Thomas Pfarrwaller, Institute of Geodesy and Photogrammetry, ETH Zurich, 2006.

6.2. PhD Theses

7. Publications

7. 1. Journal Publications (SCI/E)

- 1) Gruen, A., Akca, D., 2005. [Least squares 3D surface and curve matching](#). ISPRS Journal of Photogrammetry and Remote Sensing, 59 (3), 151-174.
- 2) Akca, D., 2007. [Matching of 3D surfaces and their intensities](#). ISPRS Journal of Photogrammetry and Remote Sensing, 62 (2), 112-121.
- 3) Akca, D., Gruen, A., 2009. [Comparative geometric and radiometric evaluation of mobile phone and still video cameras](#). The Photogrammetric Record, 24 (127), 217 – 245.
- 4) Akca, D., 2010. [Co-registration of surfaces by 3D Least Squares matching](#). Photogrammetric Engineering and Remote Sensing, 76 (3), 307 – 318.
- 5) 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.
- 6) Akca, D., Freeman, M., Sargent, I., and Gruen, A., 2010. [Quality assessment of 3D building data](#). The Photogrammetric Record, 25(132), 339-355.
- 7) Akca, D., 2012. 3D modelling of cultural heritage objects with a structured light system, Mediterranean Archaeology and Archaeometry, 12(1), 139 – 152.

7.2. Journal Publications (Non SCI/E)

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

7.3. International Conference Papers

- 1) 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.
- 2) 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.
- 3) 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).
- 4) 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.
- 5) 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.
- 6) Gruen, A., Akca, D., 2005. Least squares 3D surface matching. ASPRS 2005 Annual Conference, Baltimore (Maryland), USA, March 7-11 (on CD-ROM).
- 7) 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.
- 8) Fluehler, M., Niederoest, J., Akca, D., 2005. Development of an educational software system for the digital monoplottting. 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).
- 9) 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.

- 10)** 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.
- 11)** 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).
- 12)** 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.
- 13)** 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).
- 14)** Akca, D., Remondino, F., Novák, 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.
- 15)** Akca, D., Remondino, F., Novák, D., Hanusch, T., Schrotter, G., and Gruen, A., 2007. Performance evaluation of a coded structured light system for cultural heritage applications. *Videometrics IX, Proc. of SPIE-IS&T Electronic Imaging*, San Jose (California), USA, January 29-30, SPIE vol. 6491, pp. 64910V-1-12.
- 16)** 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.
- 17)** 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.
- 18)** 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).
- 19)** 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.
- 20)** 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).

- 21)** 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.
- 22)** 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).
- 23)** 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).
- 24)** 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).
- 25)** 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).
- 26)** 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).
- 27)** 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.
- 28)** Gruen, A., and Akca, D., 2008. Metric accuracy testing with mobile phone cameras. 21th ISPRS Congress, Beijing, China, July 3-11. International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, vol. XXXVII, part B5, pp. 729-736.
- 29)** Akca, D., and Gruen, A., 2008. Radiometric performance analysis of mobile phone cameras. 29th Asian Conference on Remote Sensing (ACRS'08), Colombo, Sri Lanka, November 10-14 (only on CD-ROM).
- 30)** Akca, D., Gruen, A., Freeman, M., and Sargent, I., 2009. Fast quality control of 3D city models. The International LIDAR Mapping Forum, New Orleans, Louisiana, US, January 26-28 (only on CD-ROM).
- 31)** Akca, D., Gruen, A., Askarinejad, A., and Springman, S.M., 2011. Photogrammetric monitoring of an artificially generated landslide. The International Conference on GeoInformation For Disaster Management (Gi4DM'11), Antalya, Turkey, May 3-8 (only on CD-ROM).

7.4. Book Chapters

1) 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.
Carl Pulfrich Award - 2009*

2) 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.

7.5. National Journal Publications

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

7.6. National Conference Papers

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., 2010. 3B Kent modellerinin kalite kontrolü. III. Uzaktan Algılama ve Coğrafi Bilgi Sistemleri Sempozyumu, Gebze, Kocaeli, 11-13 Ekim, sayfa 88-96 (in Turkish).

7.7. Other Publications

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., 2003. Re-sequencing a historical palm leaf manuscript. Internal Technical Report at IGP - ETH, Zurich, May, 39 pages.

3) Akca, D., 2003. Generalized Procrustes Analysis and its applications in Photogrammetry. Internal Technical Report at IGP - ETH, Zurich, June, 23 pages.

4) Akca, D., 2004. Least squares 3D curve matching. Internal Technical Report at IGP – ETH, Zurich, March, 27 pages.

- 5) Akca, D., 2005. Co-registration of large volume laser scanner point clouds: The Pinchango Alto (Peru) data set. Internal Technical Report at IGP –ETH, Zurich, July, 21 pages.
- 6) Akca, D., and Zhang, L., 2006. Evaluation of spatial accuracy potential of the SRTM X-SAR DEMs. Technical report to German Aerospace Center (DLR), Zurich, February, 7 pages.
- 7) Akca, D., 2007. Accuracy concept for 3D building reconstruction. Technical report to Ordnance Survey (UK), Zurich, February, 11 pages.
- 8) Akca, D., 2007. First processing results of the Avonmouth and Bournemouth test sites by the LS3D software. Technical Report to Ordnance Survey (UK), Zurich, September, 29 pages.
- 9) Akca, D., and Gruen, A., 2008. Photogrammetric Documentation of Alois Payer's Art Studio in Einsiedeln, Switzerland. Internal Technical Report at IGP - ETH, Zurich, April, 16 pages.
- 10) Springman, S., Askarinejad, A., Kienzler, P., Casini, F., Sperl, M., Bleiker, E., Akca, D., and Gruen, A., 2010. The Ruedlingen monitoring and landslide experiment. D-BAUG Annual Report 2009, ETH Zurich, March 2010, pp. 26-31.
- 11) Akca, D., and Gruen, A., 2010. Photogrammetric Processing of Image Data of the TRAMM Project. Internal Technical Report submitted to the IGT - ETH Zurich, Istanbul, October, 17 pages.

8. Research Projects

8.1. Projects accomplished at ETH Zurich (2002 - 2009)

- 1) Re-Sequencing a Historical Palm Leaf Manuscript, in cooperation with Museum Rietberg Zürich (Switzerland), finished project. 2002-2003.
<http://www.photogrammetry.ethz.ch/research/palmleaf/>
- 2) 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. 2003-2007.
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/>
- 3) Development of an Educational Software System for the Digital Monoplotting, funded by the own resources of the professorship, finished project. 2004.
Awarded by the Silber Award at the CATCON Competition at the XXth ISPRS

Congress in Istanbul, 2004.

<http://www.photogrammetry.ethz.ch/research/student/monoplotting.html>

- 4) 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. 2004.
<http://www.photogrammetry.ethz.ch/research/pinchango/>
- 5) 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. 2005.
<http://www.photogrammetry.ethz.ch/research/srtm/>
- 6) 3D Modeling of the Weary Herakles Statue in Antalya, Turkey, in cooperation with the Breuckmann GmbH (Germany), finished project. 2005-2006.
<http://www.photogrammetry.ethz.ch/research/herakles/>
- 7) Quality Assessment of 3D Building Data, in cooperation with the Ordnance Survey Research (UK), finished project. 2006-2007.
https://www.rdb.ethz.ch/projects/project.php?proj_id=20466
- 8) Mobile Photogrammetry, funded by the own resources of the professorship, finished project. 2006-2007.
https://www.rdb.ethz.ch/projects/project.php?proj_id=20467
- 9) 3D Modeling of a Khmer head in Museum Rietberg Zurich, 2007. in cooperation with Museum Rietberg Zürich (Switzerland), finished project.
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/>
- 10) Calibration and Validation of ALOS/PRISM Images and Products, 2007. in cooperation with the Japan Aerospace Exploration Agency (JAXA) and GAEL Consultant (France) of ESA/ESRIN, finished project.
<http://www.photogrammetry.ethz.ch/research/ALOS/>
- 11) 3D Modeling of Alfred Escher Statue in Zurich, 2007. in cooperation with the Credit Suisse (Switzerland), finished project.
<http://www.photogrammetry.ethz.ch/research/escher/>
- 12) 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. 2008.
- 13) 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. 2008-2009.
<http://www.cces.ethz.ch/projects/hazri/tramm/>

8.2. Projects at Işık University (2009 -)

- 1) Cep telefonu kameralarıyla 3 boyutlu mobil modelleme sistemi tasarımı, Işık Üniversitesi Bilimsel Araştırma Projesi, 2011 – 2013.

9. Administrative Positions and Employment History

9.1. Administrative Positions

DATES	UNIVERSITY / INSTITUTION	POSITION

9.2. Employment History

DATES	TITLE	UNIVERSITY / INSTITUTION	DEPARTMENT
1993-1993	Cadastre Technician	General Directorate of Land Registry and Cadastre	Yenice (Zonguldak) Cadastre Office
1997-2000	Surveying Engineer	General Directorate of Land Registry and Cadastre	Maçka (Trabzon) Cadastre Office
2000-2001	Res. Assist.	Ondokuz Mayıs University	Geodesy and Photogrammetry Engineering
2001-2002	Res. Assist.	İstanbul Technical University	Geodesy and Photogrammetry Engineering
2002-2003	Academic Guest	ETH Zürich	Institute of Geodesy and Photogrammetry
2003-2007	Doktorand	ETH Zürich	Institute of Geodesy and Photogrammetry
2003-2007	Post-doctoral researcher	ETH Zürich	Institute of Geodesy and Photogrammetry
2009-2011	Assist. Prof.	Işık University	Information Technologies
2009-2011	Assist. Prof.	Işık University	Civil Engineering

10. Scientific and Professional Memberships

- 1) Society of Graduates of Land Registry and Cadastre High School, since 1993.
- 2) Chambers of Mapping and Cadastre Engineers, Turkey, since 1997.
- 3) National Commission of Geodesy, Turkey, since 2002.
- 4) *American Society for Photogrammetry and Remote Sensing (ASPRS)*, since 2006.
- 5) Editorial board member of (Open access) MDPI Remote Sensing Journal, since 2008.
<http://www.mdpi.com/journal/remotesensing/editors>
- 6) Swiss Society for Photogrammetry Image Analysis and Remote Sensing (Schweizerische Gesellschaft für Photogrammetrie Bildanalyse und Fernerkundung – SGPBF), since 2009.
- 7) Harita Teknolojileri Elektronik Dergisi (in Turkish), Editorial Board member, since 2011.

11. Awards and Honours

- 1) Honorary degree in B.Sc. graduation (First rank, GNO: 3.43/ 4.00), Karadeniz Technical University, 1997.
- 2) Doctoral fellowship, Scientific and Technical Council of Turkey (TUBITAK), 2001-2002.
- 3) *The ISPRS Prize for Best Papers by Young Authors, 20th ISPRS Congress, 2004.*
- 4) *The Silver Medal of ETH Zurich – Distinction of the Doctoral Thesis, 2008.*
- 5) *Carl Pulfrich Award, ISPRS & Intergraph Corporation, 2009.*

12. Courses Taught

- Photogrammetry and Machine Vision
- Close-range Photogrammetry
- Introduction to Computing
- Computer Organization
- Data Structures and Algorithms
- Geographical Information Systems
- Mathematics I
- Introduction to Java Programming

13. Other academic and Scientific Activities

13.1. Reviewer Activities

- 1) Computer Graphics Forum
- 2) Photogrammetric Engineering and Remote Sensing
- 3) DAGM (German Association for Pattern Recognition)
- 4) VAST (International Symposium on virtual Reality, Archeology and Cultural Heritage)
- 5) ISPRS Journal of Photogrammetry and Remote Sensing
- 6) Eurographics
- 7) Journal of Zhejiang University Science
- 8) The Photogrammetric Record
- 9) Journal of Applied Geodesy
- 10) Computer-Aided Design
- 11) Experimental Techniques
- 12) Hydrological Processes
- 13) International Journal of Remote Sensing
- 14) Ekscentar
- 15) Computer Vision and Image Understanding
- 16) IEEE Transactions on Pattern Analysis and Machine Intelligence
- 17) EARSeL (European Association of Remote Sensing Laboratories) e-proceedings
- 18) MDPI Sensors
- 19) MDPI Remote Sensing
- 20) SPIE Journal of Applied Remote Sensing
- 21) Asian Journal of Geoinformatics
- 22) Journal of Electronic Imaging
- 23) IEEE/RSJ International Conference on Intelligent Robots and Systems
- 24) Int. Conference on Digital Media and its Applications in Cultural Heritage
- 25) Journal of Geodesy
- 26) International Journal of Geographical Information Science
- 27) Optical Engineering
- 28) Photogrammetric Journal of Finland

- 29) IEEE Transactions on Geoscience and Remote Sensing
- 30) IEEE Geoscience and Remote Sensing Letters

13.2. Editorship

- 1) MDPI Remote Sensing (Guest Editor)

13.3. Other

13. Research Interests

- Photogrammetry
- Computer and machine vision
- Camera calibration
- 3D city modeling, High accuracy object measurement and 3D 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
- Optical Remote Sensing
- Geographical Information Systems (GIS)