

Curriculum Vitae

November 2013

Elli PETSAS

Rural and Surveying Engineer, Ph.D.

Professor in Photogrammetry

*Department of Civil Engineering and Surveying & Geoinformatics Engineering
Technological Educational Institute of Athens (TEI-A)*

2003 – 2006: Head of the Sector “Surveying, Photogrammetry & Cartography”

2006 – 2010: Head of the Department of Surveying Engineering of TEI-A

2010 – 2013: Head of the Sector “Surveying, Photogrammetry & Cartography”

1. Studies

1981 Surveying Engineer, Department of Rural & Surveying Engineering, National Technical University of Athens

1996 Ph.D., Department of Rural & Surveying Engineering, National Technical University of Athens

Dissertation: “*Line Photogrammetry: Development, Investigation and Evaluation of Line Photogrammetric Algorithms for Digital Applications*”.

2. Teaching

Teaches the courses “Photogrammetry I”, “Photogrammetry III” and “Photogrammetric Applications” at the Department of Surveying Engineering of TEI-A

3. Supervision of Diploma Theses

Supervision of 60 Diploma Theses at the Department of Surveying Engineering of TEI-A

4. Participation in the Supervision and Evaluation of Ph.D. Dissertations

- Member of the Supervising Committee of the Ph.D. Dissertation of Lazaros Grammatikopoulos “*Geometric Information from Single Uncalibrated Images in Photogrammetry and Computer Vision*” (Department of Rural & Surveying Engineering, National Technical University of Athens, 2007).
- Member of the Evaluation Committee of the Ph.D. Dissertation of Ilias Kalisperakis “*Epipolar Geometry in Projective and Euclidean Space*” (Dept. of Rural & Surveying Engineering, National Technical University of Athens, 2010).
- Rapporteur of the Ph.D. Dissertation of Christos P. Yiakoumettis “*Semantic Navigation of Large Scale Geo-referenced 3D Scenes and Virtual Worlds*”, Université de Limoges, Discipline/Spécialité: Informatique (2012).

5. Research Projects

- 2001 '*Photogrammetric Mapping of the Parodoi of the Ancient theatre of Sparta*'
(Financed by British Archaeological School of Athens)
- 2002-2003 '*Investigation of Photogrammetric Methods for the Geometric Documentation of Damages due to Earthquake on the Eastern Part of the Ancient Castle of Aigosthena*'
(Financed by the Greek Ministry of Culture)
- 2005-2007 '*Development of Algorithms for the Automatic Generation of Accurate Photorealistic Models by Combining Photogrammetry, Image Processing and Laser Scanning – Application in the Documentation of Cultural Heritage*'
(Financed within the "Archimedes II – Support of Research Groups of TEI" framework)
- 2005-2007 '*Investigation of Modern Techniques and Automatic Approaches for the Generation of "True Orthoimages" with Application in the Documentation of a Roman Monument*'
(Financed by the Greek Ministry of Culture).
- 2008 '*Generation of a Photogrammetric Structured-Light Scanner for the Reconstruction of Small Objects*'
(Financed by the Technological Educational Institute of Athens)
- 2012-2015 '*Intelligent Pattern Recognition Techniques for the Development of Multimodal Representations of Urban Areas*'
(Financed within the "Archimedes III – Support of Research Groups of TEI" framework)

6. Evaluator of Research Proposals

Evaluator of proposals for the "Archimedes I" research framework (2003).

7. Reviewer of Photogrammetric Journals

- Photogrammetric Engineering & Remote Sensing (USA)
- The Photogrammetric Record (UK)
- Optics and Lasers in Engineering

8. Citations

My scientific publications have 476 citations (November 2013)

9. Publications

- 2013 Adam K., Kalisperakis I., Grammatikopoulos L., Karras G., Petsa E., Automatic camera calibration for cultural heritage applications using unstructured planar objects. *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Volume XL-5/W2, 2013 – XXIV International CIPA Symposium, 2-6 September, Strasbourg, pp. 1-6.*
- 2013 C. Stentoumis, L. Grammatikopoulos, I. Kalisperakis, E. Petsa, G. Karras, A local adaptive approach mfor dense stereomatching in architectural scene reconstruction. *5th International Workshop on 3D Virtual Reconstruction and*

- Visualization of Complex Architectures (3D-ARCH 2013)*, February 25-26, Trento, Italy
- 2012 A. Prokos, I. Kalisperakis, E. Petsa, G. Karras, Automatic calibration of stereo-cameras using ordinary chess-board patterns. *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, vol. XXXVIII, Part 5, pp. 45-49.
- 2011 Kalisperakis I., Grammatikopoulos L., Petsa E., Karras G., Automatic A structured-light approach for the reconstruction of complex objects. XXIII CIPA International Symposium, Prague, September 12-16.
- 2010 Prokos A., Karras G., Petsa E., Automatic 3D surface reconstruction by combining stereovision with the slit-scanner approach. *International Archives of Photogrammetry, Remote Sensing and Spatial Information Sciences*, Vol. XXXVIII, Part 5, pp. 505-509.
- 2009 V. Douskos, L. Grammatikopoulos, I. Kalisperakis, G. Karras, E. Petsa, FAUCCAL: An open source toolbox for fully automatic camera calibration. *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, Vol. XXXVII, Part B5, pp. 21-26.
- 2008 V. Douskos, I. Kalisperakis, G. Karras, E. Petsa, Fully automatic camera calibration using regular planar patterns. *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, Vol. XXXVII, Part B5, pp. 21-26.
- 2007 Karras G., Grammatikopoulos L., Kalisperakis I., Petsa E., Generation of orthoimages and perspective views with automatic visibility checking and texture blending. *Photogrammetric Engineering and Remote Sensing*, 73(4), pp. 403-411
- 2007 Grammatikopoulos L., Karras G., Petsa E., An automatic approach for camera calibration from vanishing points. *ISPRS Journal of Photogrammetry & Remote Sensing*, 62, pp. 64-76.
- 2007 Grammatikopoulos L., Kalisperakis I., Karras G., Petsa E., Automatic multi-view texture mapping of 3D surface projections. *3D Virtual Reconstruction and Visualization of Complex Architectures (3D Arch '07)*, July 12-13, ETH Zürich, Switzerland.
- 2007 Petsa E., Kalisperakis I., Grammatikopoulos L., Karras G., Pagounis V., Laser scanning and automatic multi-image texturing of surface projections. *XXI CIPA International Symposium*, Athens, 1-6 October, pp. 579-584.
- 2006 Kalisperakis I., Grammatikopoulos L., Petsa E., Karras G., An open-source educational software for basic photogrammetric tasks. *Proceedings of the FIG- ISPRS-ICA International Symposium on "Modern Technologies, Education & Professional Practice in Geodesy & Related Fields"*, Sofia, 09-10 November, pp. 581-586.
- 2006 Grammatikopoulos L., Karras G., Petsa E., Kalisperakis I., A unified approach for automatic camera calibration from vanishing points. *International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences*, Vol. XXXVI, Part 5 (in CD).
- 2005 Grammatikopoulos L., Kalisperakis I., Karras G., Petsa E., Data fusion from

- multiple sources for the production of orthographic and perspective views with automatic visibility checking. *Proc. XX CIPA International Symposium*, Torino, 27 September - 1 October, pp. 819-824.
- 2005 Kalisperakis I., Karras G., Petsa E., Estimation of camera parameters from stereo pairs with no external control information. *Proc. XX CIPA International Symposium*, Torino, 27 September - 1 October, pp. 390-394.
- 2005 Grammatikopoulos L., Karras G., Petsa E., Automatic estimation of vehicle speed from uncalibrated video sequences. *Proceedings of the FIG-ISPRS-ICA International Symposium on "Modern Technologies, Education & Professional Practice in Geodesy & Related Fields"*, Sofia, 03-04 November, pp. 332-338.
- 2004 Grammatikopoulos L., Kalisperakis I., Karras G., Kokkinos T., Petsa E., On automatic orthoprojection and texture-mapping of 3D surface models. *International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences*, 35(5), pp. 360-365.
- 2004 Grammatikopoulos L., Karras G., Petsa E., Camera calibration combining images with two vanishing points. *International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences*, 35(5), pp. 99-104.
- 2004 Grammatikopoulos L., Kalisperakis I., Karras G., Kokkinos T., Petsa E., Automatic multi-image photo-texturing of 3D surface models obtained with laser scanning. *CIPA International Workshop on "Vision Techniques Applied to the Rehabilitation of City Centres"*, Lisbon, 25-27 October (πρακτικά σε CD).
- 2003 Kalisperakis I., Rova M., Petsa E., Karras G., On multi-image reconstruction from historic photographs. *XIX CIPA International Symposium*, Antalya, Turkey, pp. 216-219.
- 2003 Grammatikopoulos L., Karras G., Petsa E., Camera calibration approaches using single images of man-made objects. *XIX CIPA International Symposium*, Antalya, Turkey, pp. 328-332.
- 2003 Mavromati D., Petsa E., Karras G., Experiences in photogrammetric archaeological recording. *XIX CIPA International Symposium*, Antalya, Turkey, pp. 666-669.
- 2002 Grammatikopoulos L., Karras G., Petsa E., Geometric information from single uncalibrated images of roads. *International Archives of Photogrammetry & Remote Sensing*, 34(B5), pp. 21-26.
- 2002 Mavromati D., Petsa E., Karras G., Theoretical and practical aspects of archaeological orthoimaging. *International Archives of Photogrammetry & Remote Sensing*, 34(B5), pp. 413-418.
- 2002 Petsa E., Kouroupis S., Karras G., Abgerissenes Wohnhaus in Athen. *Nahbereichsphotogrammetrie in der Praxis*, Th. Luhmann (Hrsg.), Herbert Wichmann Verlag, Heidelberg, pp. 3-6.
- 2002 Petsa E., Mavromati D., Karras G., Antikes Theater von Sparta. *Nahbereichsphotogrammetrie in der Praxis*, Th. Luhmann (Hrsg.), Herbert Wichmann Verlag, Heidelberg, pp. 55-58.
- 2002 Karras G., Petsa E., Theodoropoulou I., Altgriechische Türme. *Nahbereichs-*

- photogrammetrie in der Praxis*, Th. Luhmann (Hrsg.), Herbert Wichmann Verlag, Heidelberg, pp. 59-62.
- 2001 Theodoropoulou I., Petsa E., G. Karras, Digital surface development of large cylindrical and conic structures with a single image technique. *The Photogrammetric Record*, 17(97), pp. 25-37.
- 2001 Karras G., Petsa E., Dimarogona A., Kouroupis S., Photo-textured rendering of developable surfaces in architectural photogrammetry. *Virtual and Augmented Architecture - VAA '01*, B. Fisher, K. Dawson-Howe & C. O'Sullivan (eds.), Springer Verlag, Berlin, pp. 147-158.
- 2001 Petsa E., 2001. Zur digitalen Projektion und Visualisierung von Türmen. *Photogrammetrie, Fernerkundung, Geoinformation*, Nr. 4, pp. 283-288.
- 2001 Petsa E., S. Kouroupis, G. Karras, Inserting the past in video sequences. *XVIII CIPA International Symposium*, Potsdam, Germany, September 18-22, pp. 707-712.
- 2000 Petsa E., Karras G., Constrained line-photogrammetric 3D reconstruction from stereopairs. *International Archives of Photogrammetry & Remote Sensing*, 33(B5/2), pp. 604-610.
- 2000 Theodoropoulou I., Petsa E., G. Karras, Photogrammetric projection of curved surfaces in archaeological and architectural mapping. *Symposium on Archaeological and Architectural Photogrammetry*, The Photogrammetric Society, York, 30 November 2000.
- 1999 Karras G., Petsa E., Metric information from single uncalibrated images. *XVII CIPA International Symposium, Olinda, 3-6 Οκτωβρίου* (σε CD).
- 1999 Karras G., Mountrakis G., Patias P., Petsa E., Modeling distortion of super-wide-angle lenses for architectural and archaeological applications. *International Archives of Photogrammetry & Remote Sensing*, 32(5), pp. 570-573.
- 1997 Karras G.E., Patias P., Petsa E., Ketipis K., Raster projection and development of curved surfaces. *International Archives of Photogrammetry and Remote Sensing*, vol. 32(5C1B), pp. 179-185.
- 1996 Karras G.E., Patias P., Petsa E., Digital monoplotting and photo-unwrapping of developable surfaces in architectural photogrammetry. *International Archives of Photogrammetry and Remote Sensing*, 31(5), pp. 270-274.
- 1995 Patias P., Petsa E., Streilein A., *Digital Line Photogrammetry: Concepts, Formulations, Degeneracies, Simulations, Algorithms, Practical Examples*. ETH Zürich, Institut für Geodäsie und Photogrammetrie, Bericht Nr. 252, pp. 54.
- 1995 Petsa E., Patias P., Straight lines in photogrammetry: Basic algorithms (*Invited Paper*). *Integrated Sensor Orientation*, I. Colomina & J. Navarro (eds.), Wichmann Verlag, Heidelberg, pp. 185-194.
- 1994 Petsa E., Patias P., Formulation and assessment of straight-line based algorithms for digital photogrammetry. *International Archives of Photogrammetry and Remote Sensing*, 30(5), pp. 310-317.
- 1994 Petsa E., Patias P., Sensor attitude determination using linear features. *International Archives of Photogrammetry and Remote Sensing*, 30(1), pp. 62-70.

- 1994 Karras G.E., Petsa E., An algorithm for the localization of change in irregularly shaped surfaces. *Recent Advances in Experimental Mechanics*, J.F. Silva Gomes, F.B. Branco, F. Martins de Brito, J. Gil Saraiva, M. Lurdes Eusibio, J. Sousa Cirne, A. Correia da Cruz (eds.), Balkema Editions, Rotterdam, pp. 479-482.
- 1993 Petsa E., Karras G., Aperghis G., Zur Fassadenentzerrung aus Amateurbildern niedergerissener Altstadtviertel. *Zeitschrift für Vermessungswesen & Raumordnung*, 58(8), pp. 431-436.
- 1993 Karras G.E., Petsa E., DEM orientation and detection of deformation in close-range photogrammetry without control. *Photogrammetric Engineering & Remote Sensing*, 59(9), pp. 1419-24.
- 1993 Karras G.E., Patias P., Petsa E., Experiences with the rectification of non-metric digital images when ground control is not available. *Proceedings of the XV CIPA Symposium*, Βουκουρέστι (υπό έκδοση).
- 1992 Karras G.E., Petsa E., On detection of deformation in reconstructed body models. *International Symposium on 3D Scoliotic Deformities*. J. Dansereau (ed.), Éditions de l' École Polytechnique de Montréal & G. Fischer Verlag, Stuttgart, pp. 370-375.
- 1991 Papaioannou G., Tympanidou C., Petsa E., Moiré topography, a simple non-contact method for use in cosmetic dermatology. *2nd Congress of the European Academy of Dermatology & Venerology*, Athens, 10-13 October, Abstracts Volume, p. 395.
- 1991 Papaioannou G., Tympanidou C., Petsa E., Karras G., Towards a more rational assessment of fat accumulation and mobilization in young women. *2nd Congress of the European Academy of Dermatology & Venerology*, Athens, 10-13 October, Abstracts Volume, p. 395.
- 1982 Petsa E., Karras G.E., Badekas J., Assessing the accuracy of moiré topography measurements. *International Archives of Photogrammetry*, 24(5), pp. 367-276.
- 1982 Karras G.E., Petsa E., Tympanidis K., Lower limb measurements using moiré topography. *International Archives of Photogrammetry*, 24(5), pp. 261-271.