

# Curriculum Vitae for Xenophon Zabulis

**Date of birth:** 27 October 1973

**Citizenship:** Greek

**Marital Status:** Married, 1 child.

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## **EDUCATION AND PROFESSIONAL EXPERIENCE**

- 2010-present** *Principal Researcher, Institute of Computer Science of the Foundation for Research and Technology – Hellas (ICS-FORTH)*
- 2008– 2010** *Associate Researcher, Institute of Computer Science of the Foundation for Research and Technology – Hellas (ICS-FORTH)*
- 2007** *Post doctorate Fellow, Institute of Computer Science of the Foundation for Research and Technology – Hellas (ICS-FORTH)*
- 2004-2007** *Post doctorate Fellow, Informatics and Telematics Institute, Centre of Research and Technology Hellas (ITI-CERTH)*
- 2004-2007** *Coordinator of Informatics Group, Tellogleion Art Foundation, Thessaloniki, Greece.*
- 2003-2004** *Military Service*
- 2002-2003** *Post doctorate Fellow, General Robotics, Automation, Sensing and Perception Laboratory, Department of Computer and Information Science, University of Pennsylvania*
- 2001-2002** *Post doctorate Fellow, Institute for Research in Cognitive Science, University of Pennsylvania*
- 1998-2001** *PhD, University of Crete*
- 1996-1998** *MSc, University of Crete*
- 1992-1996** *BSc, University of Crete*
- 1985-1991** *High School Studies, Anatolia American College of Thessaloniki, Greece.*

## **SCHOLARSHIPS**

- 2001-2003 Research scholarship from the Computer and Information Science Department of the University of Pennsylvania.
- 2001-2002 Research scholarship from the National Science Foundation for research at the Institute for Research in Cognitive Science, Department of Computer and Information Science, University of Pennsylvania.
- 2001 “Manasaki” graduate scholarship. This scholarship is awarded annually to the best graduate student of each department, of the University of Crete.
- 1998-2001 Graduate student scholarship from the Institute of Computer ICS-FORTH for research at the Computer Vision and Robotics Laboratory at ICS-FORTH.
- 1996-1998 Graduate student scholarship from ICS-FORTH for research at the Center for Medical Informatics and Health Telematics Applications at ICS-FORTH.
- 1995-1998 Undergraduate scholarship, from ICS - FORTH for research at the Center for Medical Informatics and Health Telematics Applications at ICS-FORTH.

## **TEACHING EXPERIENCE**

- 2009-2020 Visiting professor to the Computer Science Department - University of Crete, course: “Programming”.
- 2011-2012 Teaching “Computational Vision for Interactive Application”, summer school at FORTH, for visiting graduate students of the University of York.
- 2008-2011 Visiting professor to the Computer Science Department - University of Crete, course: “Introduction to Computer Programming”, for the Mathematics department.
- 2004-2007 Co-tutoring with Prof. M. Strintzis in the “Interdisciplinary Graduate Program in Medical Informatics” Aristotle University of Thessaloniki
- 1996-1998 Throughout his graduate studies XZ has been a teaching assistant in various undergraduate and graduate courses at the Department of Computer Science, University of Crete, including robotics, distributed systems, and computer organization.
- 1998-2001 Throughout the elaboration of his PhD thesis XZ has been a teaching assistant in the courses of computer vision and advanced topics in computer vision, at the Department of Computer Science, University of Crete.
- 1998 For one semester, XZ gave lectures on the Java programming language to his laboratory colleagues at the CMI-HTA of ICS - FORTH.

## **CO-SUPERVISION OF THESES AND PARTICIPATION IN THESES COMMITTEES**

1. N. Kokolantonakis, “Requirements and protocol for the 3D documentation of Heritage Crafts tools”, Co-supervision with Constantine Stephanidis, Computer Science Department, University of Crete, Thesis co-supervisor, 2014-2017.
2. A. Qammaz, “*A Hybrid Method for 3D Pose Estimation of Personalized Human Body Models*”, MSc, member of evaluation committee, Computer Science Department, University of Crete, 2018.
3. V. Nikodemou, “*Single Shot 3D Hand Pose Estimation Using Radial Basis Function Networks*”, MSc, member of evaluation committee, Computer Science Department, University of Crete, 2017.
4. G. Margetis, “*Interacting with augmented physical printed matter in ambient intelligence environments: the InPrinted framework*”, PhD, member of defense committee, Computer Science Department, University of Crete, 2017.
5. M. Korozi, “*Empowering Intelligent Classrooms with Attention Monitoring and Intervention Cycles*”, PhD, member of defense committee, Computer Science Department, University of Crete, 2017.
6. K. Roditakis, “*Generative 3D Hand Tracking with Spatially Constrained Pose Sampling*”, MSc, Computer Science Department, University of Crete, member of evaluation committee, 2017.
7. V. Manousaki, “*Evaluating design options of Bag-of Visual-Words based methods for action classification*”, MSc, University of Crete, member of evaluation committee, 2017.
8. C. Hernandez-Matas, “*Retinal image registration*”, PhD, Co-supervision with Antonis Argyros, Computer Science Department, University of Crete, Thesis co-supervisor, 2014-2017.
9. E. Papadaki, “*CocinAR: An adaptable multimodal Augmented Reality system for developing cooking skills in children with cognitive impairments*”, MSc, Computer Science Department, University of

Crete, member of evaluation committee, 2017.

10. J. C. Wigdahl, "*Retinal Vascular Measurement Tools for Diagnostic Feature Extraction*", PhD, Computer Science Department, University of Padova, member of defense committee, 2016.
11. N. Kazepis, "*FIRMA: A Development Framework for Elderly- Friendly Interactive Multimodal Applications for Asslsltve Robots*", PhD, Computer Science Department, University of Crete, member of defense committee, 2015.
12. G. Galanakis, "*Tracking, re-identification and interaction using RGB-D sensors in Ambient Intelligence environments*", Master Thesis Advisor, Computer Science Department, University of Crete, 2013-2015.
13. S. Markou, "*Full-body pose tracking under severe occlusions – the Top View Reprojection approach*", PhD, Computer Science Department, University of Crete, member of defense committee, 2015.
14. V. Katikaridou, "*Enhancing the accuracy of extrinsic calibration in a cluster of RGBD cameras*", Diploma Thesis Advisor, Computer Science Department, University of Crete, 2014.
15. J. Bhattacharyya, "*An Active Stereo-Panoramic Approach for Augmented Reality*", external member of the Board of Examiners of PhD thesis, National Institute of Technology Durgapur, 2013.
16. P. Katsifarakis, "*Head gesture recognition using a depth camera*", Diploma Thesis Advisor, Computer Science Department, University of Crete, 2013.
17. J. Perron, "*Assembly Verification*", internship at ICS-FORTH in collaboration with University of York, 2012.
18. M. Zidianakis, "*Supporting young children in Ambient Intelligence environments*", PhD, member of advisory committee, Computer Science Department, University of Crete, 2010 – 2014.
19. N. Partarakis, "*Using Ambient Intelligence technologies for producing and disseminating art*", PhD, member of advisory committee, Computer Science Department, University of Crete, 2010 – 2013.
20. M. Antunes, "*Stereo from symmetry*", PhD, external member of advisory committee, Computer Science Department, University of Coimbra, 2010.
21. K. Tzevanidis, "*GPU-powered multi-camera 3D reconstruction based on optimized foreground detection*", MSc, Computer Science Department, University of Crete, member of evaluation committee, 2010.
22. K. Papoutsakis, "*Visual Object Tracking and Segmentation in a Closed Loop*", MSc, Computer Science Department, University of Crete, member of evaluation committee, 2010
23. I. Oikonomidis, "*Deformable 2D shape matching based on shape context and dynamic programming*", MSc, University of Crete, member of evaluation committee, 2010.
24. G. Floros, "*Vision based tracking of a 3D model of a human hand*", MSc, member of evaluation committee, MSc, Computer Science Department, University of Crete, 2009.
25. A. Chatziargiriou, "*Digitization of 3D scenes with an uncalibrated camera*", Department of Electrical Engineering, Aristotle University of Thessaloniki, co-supervision with professor M. Srintzis, 2006.
26. G. Kordelas, "*Fast and accurate digitization of 3D scenes*", Department of Electrical Engineering,

Aristotle University of Thessaloniki, co-supervision with professor M. Strintzis, 2005.

27. A. Gretistas & K. Taptas, “*Real-time stereoscopic reconstruction of surfaces using the GPU*”, Department of Electrical Engineering, Aristotle University of Thessaloniki, co-supervision with professor M. Strintzis, 2006.
28. M. Papara, “*Studying the stability of wet foams by combining electrical, optical and volumetric measurements*”, Department of computer Science, Aristotle University of Thessaloniki, technical co-supervision with associate professor T. D. Karapantsios, 2006.
29. E. Danoura, “*Dynamic phenomena during the detachment of bubbles from a thin tube*”, Department of Chemistry, Aristotle University of Thessaloniki, technical co-supervision with associate professor T. D. Karapantsios. 2006.

## **WORK EXPERIENCE**

- 2004-2007 Informatics team leader, Tellogleion Art Foundation, Thessaloniki, Greece.
- 1999-2000 Part-time employment as a software engineer for the Research and Development department of FORTHnet S.A.
- 1994-1995 Part-time employment as a developer at the Multimedia Lab of the Computer Center of University of Crete.
- 1986-1987 Part-time employment as a technician at Apple Computers in Thessaloniki, Greece.

## **HONORS**

1. Distinction for oral presentation for P. Anyfanti, A. Triantafyllou, E. Gkaliagkousi, **X. Zabulis**, A. Lazaridis, S. Hatzimichailidou, S. Aslanidis, S. Douma, “*Αξιολόγηση Αγγειακής Ερήμωσης των Τριχοειδών Δέρματος σε Ασθενείς με Ρευματοειδή Αρθρίτιδα: Συσχέτιση με Δείκτες Φλεγμονής και Μακροκυκλοφορίας*”, Πανελλήνιο Συνέδριο Υπέρτασης, Athens, 29-31 March 2018.
- First prize for oral presentation for P. Anyfanti, A. Triantafyllou, X. Zabulis, G. Triantafyllou, E. Gkaliagkousi, E. Gavriilaki, S. Douma, “*Συσχέτιση Του Λόγου Αρτηριών-Φλεβών Του Αμφιβληστροειδούς Με Αιμοδυναμικές Παραμέτρους σε Δείγμα Νεοδιαγνωσθέντων Υπερτασικών και Υγιών Ατόμων*”, 15ο Πανελλήνιο Συνέδριο της Ελληνικής Εταιρείας Υπέρτασης, 5-7 March 2015, Thessaloniki, Greece (in Greek).
  - Demonstrator “*Interactive Documents*” received the Gold Medal Award at the 2014 Taipei International Invention Show & Technomart.
  - Demonstrator “*iEat: An interactive restaurant table*” received the Silver Medal Award at the 2014 Taipei International Invention Show & Technomart.
  - Demonstrator “*Interactive Wall*” received the Platinum Award at the 2014 Taipei International Invention Show & Technomart.
  - Demonstrator “*iEat: An interactive restaurant table*” received the Thailand Award for Best International Invention by the National Research Council of Thailand – NRCT in “2014 INST: The 10th Taipei International Invention Show & Technomart”, Taipei, Republic of China (Taiwan).
  - Demonstrator “*Interactive Documents*” at the booth of EU Project Medeat at the ITB Berlin Travel Trade Show 2014, which won the second place in the NGOs & Non-Profit Institutions category of the organized by the Cologne Business School.

- "Alberto Ferrari" Poster Award of the ESH for Hemodynamics Session, for P. Anyfanti, A. Triantafyllou, E. Gavriilaki, K. Petidis, A. Pyrpasopoulou, G. Triantafyllou, A. Dimakopoulou, X. Zabulis, S. Aslanidis, E. Gkaliagkousi, S. Douma, "*Phenotyping the retinal microcirculation by use of impedance cardiography: association between early retinal alterations and hemodynamic profile*", presented in the Joint Meeting of the European Society of Hypertension (ESH) and International Society of Hypertension (ISH), June 13-16 Athens 2014.
- Distinction for the paper A. Triantafyllou, X. Zabulis, P. Anyfanti, E. Gavriilaki, E. Gkaliagkousi, A. Pyrpasopoulou, V. Gkolias, G. Triantafyllou, B. Nikolaidou, C. Zamboulis, S. Aslanidis, S. Douma, "*Early and global estimation of microvascular target organ damage in hypertension by use of innovative software*", 2nd International Medical Olympiad, 18-20 October 2013, Thessaloniki, Greece.
- First place of Young Investigator-in-Training Abstract Competition for A. Triantafyllou, M. Doulas, E. Gavriilaki, P. Anyfanti, X. Zabulis, E. Gkaliagkousi, K. Petidis, P. Karamaounas, V. Goliias, A. Pyrpasopoulou, N. Lazaridis, C. Zamboulis and S. Douma, "*Correlation between retinopathy and hypertension phenotypes based on ambulatory blood pressure*", presented in the Annual Scientific of American Society of Hypertension, 19-22 May 2012, New York, U.S.A. as an oral presentation.
- "Alberto Ferrari" Poster Award of the ESH for Small Vessels session, for A. Triantafyllou, X. Zabulis, P. Anyfanti, E. Gkaliagkousi, K. Petidis, E. Gavriilaki, A. Pyrpasopoulou, P. Karamaounas, V. Goliias, B. Nikolaidou, M. Doulas, S. Douma, "*Retinopathy in Different Hypertension Phenotypes, Another Example of Target Organ Damage in Masked Hypertensives*", presented in the 22<sup>nd</sup> European Meeting on Hypertension and Cardiovascular Protection, April 26-29, 2012, ICC London.
- Best paper award for G. Manikis, V. Sakkalis, X. Zabulis, P. Karamaounas, A. Triantafyllou, S. Douma, C. Zamboulis, K. Marias, "*An Image Analysis Framework for the Early Assessment of Hypertensive Retinopathy Signs*", International Conference on e-Health and Bioengineering, Iași, Romania, 24-26 November 2011.
- In 2010, the VECTOR project, which XZ was participating, was awarded with the Best Exhibit Award, which was sponsored by the Intel Company, at the ICT 2010 Event which was organized by the European Commission at Brussels (27-29 September 2010).
- In 2001 the "Manasaki" graduate scholarship was awarded to XZ. This scholarship is awarded annually to the best graduate student of each department, of the University of Crete.

## **PARTICIPATION IN FUNDED RESEARCH PROGRAMS**

| <b>Agency</b> | <b>Title</b>   | <b>Duration</b> | <b>Funding</b>                                  | <b>Duties</b>                   |
|---------------|--|-----------------|---|---------------------------------|
| ICS-FORTH     | Transparent3D  | 2020-2022       | EU – Marie Curie                                | Coordinator                     |
| ICS-FORTH     | Representation and Preservation of Heritage Crafts (Mingei)  | 2018-2021       | EU – H2020                                      | Coordinator                     |
| ICS-FORTH     | InterCONnected NEXt-Generation Immersive IoT Platform of Crime and Terrorism DetectiON, PredictiON, InvestigatiON, and PreventiON Services                         | 2018-2021       | EU – H2020                                      | Scientist responsible for FORTH |
| ICS-FORTH     | Digitation of the painting collection of the Municipality of Heraklion   | 2018            | Municipality of Heraklion                       | Coordinator                     |
| ICS-FORTH     | System for Monitoring Vital Signs in Senior Citizens (MyHealthWatcher)   | 2017-2019       | Hellenic Foundation for Research and Innovation | Coordinator                     |
| ICS-FORTH     | Culture and Technology: New technologies in the Research, Study, Documentation, and Access to information of Cultural Heritage Objects and Monuments (POLITEIA-II) | 2018-2021       | Hellenic Foundation for Research and Innovation | Participation                   |
| ICS-FORTH     | Complex wetting phenomena (COWET)  | 2014-2017       | EU – Marie Curie ITN                            | Outsourcer                      |
| ICS-FORTH     | High performance avionics solution for advanced and complex GNC systems (HIPNOS)   | 2016-2017       | ESA   | Participation                   |
| ICS-FORTH     | Retinal Vascular Modeling, Measurement and Diagnosis (REVAMMAD)  | 2013-2016       | EU – Marie Curie ITN                            | Scientist responsible for FORTH |
| ICS-FORTH     | Sparing Robotics Technologies for Autonomous Navigation Extension Activity (SEXTANT)   | 2012-2013       | ESA   | Participation                   |
| ICS-FORTH     | Code Optimization and Modification for Partitioning of Algorithms developed in SEXTANT (COMPASS)   | 2014-2015       | ESA   | Participation                   |
| ICS-FORTH     | Distributed Sensor systems For Emergency Response (DISFER)   | 2013-2016       | GSRT  | Scientist responsible for FORTH |
| ICS-FORTH     | Dexterous Assembler Robot Working with Embodied  | 2011-2015       | EU – IST  | Participation                   |



|                            |   |              |             |   |
|----------------------------|---|--------------|-------------|---|
|                            | Intelligence (DARWIN)   |              |             |   |
| ICS-FORTH                  | Novel Design Principles and Technologies for a New Generation of High Dexterity Soft-bodied Robots Inspired by the Morphology and Behavior of the Octopus (OCTOPUS) | 2009-2013    | EU – FET    | Participation                                 |
| ICS-FORTH                  | Ambient Intelligence Programme  | 2007-present | ICS – FORTH | Participation                                 |
| ICS-FORTH                  | Macedonia from fragments to pixels  | 2007-2008    | ICS – FORTH | Project management and technical coordination |
| ICS-FORTH                  | Versatile Endoscopic Capsule for gastrointestinal Tumor Recognition and Therapy (VECTOR)  | 2007-2011    | EU – IST    | Participation                                 |
| ITI-CERTH                  | Information Mechanism Based on Visual Localization  | 2007         | GSRT        | Participation                                 |
| ITI-CERTH                  | M-DRAW. A Platform for the Development of Graphics for Wireless Mobile Telephony Devices (MDRAW)  | 2005-2007    | GSRT        | Technical coordinator                         |
| Tellogleion Art Foundation | Multiple Utilization of Valuable Works and Archives of Modern Greek Art, via Informational and Educational Electronic Publications and the Internet                 | 2005-2007    | GSRT        | Technical coordinator                         |
| ITI-CERTH                  | In-vivo embolic detector - phase II   | 2005-        | ESA         | Scientific consult                            |
| ITI-CERTH                  | Integrated Three-Dimensional Television - Capture, Transmission and Display - 3DTV  | 2004-2007    | EU – IST    | Participation                                 |
| ICS-FORTH                  | Health Emergency Management and Coordination through Telematics Operational Resources   | 1996-1998    | EU – IST    | Participation, graduate scholar               |
| University of Pennsylvania | National Tele-Immersion Initiative  | 2002-2003    | NSF         | Participation                                 |
| University of Pennsylvania | Post-doc funded by NSF Center of Excellence grant at the Institute for Research in Cognitive Science, University of Pennsylvania                                    | 2001-2002    | NSF         | Participation, research scholar               |
| ICS-FORTH                  | Integrated Hospital Information   | 1995-1996    | GSRT        | Participation,                                |

|           |   |           |          |                                      |
|-----------|---|-----------|----------|--------------------------------------|
|           | System  |           |          | undergraduate scholar                |
| ICS-FORTH | Trans-European Telecommunications Networks for Telemedicine | 1996-1998 | EU – IST | Participation, undergraduate scholar |

## **SERVICES AND ACTIVITIES**

### **Evaluation activities**

- EC Future and Emerging Technologies Open Scheme under FET-Open, Remote Evaluator
- State Scholarships Foundation, 2011-14, Greece, Evaluator
- General Secretariat for Research and Technology of Greece, 2008 – Project reviewer.
- University of Patras, Karatheodoris Programme, 2010 – Project Reviewer.

### **Groups and committees**

- ERCIM Working Group “*The Sensor Web*”, Member of Steering Committee.
- IEEE Communications Society, Technical Committee on “*Multimedia Communications, Interest Group*”, Key member.

### **Editing**

- “*International Journal of Digital Multimedia Broadcasting*”, Hindawi Publications, Member of editorial board.
- “*Advances in 3DTV: Theory and Practice*”, Special Issue, Hindawi Publications, International Journal of Digital Multimedia Broadcasting, Volume 2010 (2010), Editor of special issue.

### **Organizational activities and chairing**

- SMC2017, IEEE International Conference on Systems, Man, and Cybernetics, 5-8 October, 2017, Banff, Canada – Publications chair.
- ISVC 2015, International Symposium on Visual Computing – Conference session chair.
- SiPS 2015, IEEE International Workshop on Signal Processing Systems – Publications chair.
- ICVS 2015, International Conference on Computer Vision Systems, 6-9 July, 2015, Copenhagen, Denmark – Conference session chair.
- ISVC 2013, International Symposium on Visual Computing – Local arrangements chair.
- ISVC 2013 – Conference session chair.
- 1<sup>st</sup> International Conference on “Distributed, Ambient and Pervasive Interactions”, in the context of HCI International 2013, the 15<sup>th</sup> “International Conference on Human-Computer Interaction”, 2013-18 – Member of the Program Board.
- ICME 2013, IEEE International Conference on Multimedia and Expo – Publications chair.

- ISVC 2012, International Symposium on Visual Computing – Local arrangements chair.
- ISVC 2012 – Conference session chair.
- Co-organization of workshop in ACM Multimedia, “International Workshop on User Experience in e-Learning and Augmented Technologies in Education”, 2012.
- Co-organization of workshop in IEEE International Conference on Multimedia and Expo, “Interactive Ambient Intelligent Multimedia Environments”, 2011.
- ICME 2011, IEEE International Conference on Multimedia and Expo – Publications chair.
- ISVC 2010, International Symposium on Visual Computing – Conference session chair.
- 3DTV Conference 2007, Special Session, “*Perceptual Factors in 3D TV*”, Kos, Greece, 7-9 May 2007, co-organizer with Anup Basu, University of Alberta.
- 3DTV Conference, Capture Transmission and Display of 3D video, Kos, Greece, 7-9 May 2007, Publications chair.
- 3DPVT 2006, International Symposium on 3D Data Processing, Visualization and Transmission, University of North Carolina, Chapel Hill, U.S.A., June 14-16, 2006 – Publications chair.
- 3DPVT 2006 – Conference session chair.
- 3DTV Conference 2007 – Conference session chair.
- 3DPTV 2006 – Conference session chair.

### **Reviews for Journals**

3D Research, Springer / Applied Optics, Optical Society of America / Chemical Engineering and Technology, Wiley / Computer / Computer Graphics Forum, Wiley / Computer Vision and Image Understanding, Elsevier / Computers in Human Behavior, Elsevier / Displays, Elsevier / Electronics, MDPI / Human Factors: The Journal of the Human Factors and Ergonomics Society / IEEE Signal Processing Letters / IEEE Transactions on Circuits and Systems for Video Technology / IEEE Transactions on Image Processing / IEEE Transactions on Multimedia / Image and Vision Computing, Elsevier / Interacting with Computers, Elsevier / International Journal of Computer Assisted Radiology and Surgery, Springer / International Journal of Human-Computer Interaction, Taylor Francis / International Journal of Digital Multimedia Broadcasting, Hindawi / International Journal of Machine Learning and Cybernetics, Elsevier / ISA Transactions, Elsevier / Journal of Ambient Intelligence and Humanized Computing / Journal of Computer Science and Technology / Journal of Imaging / Journal of Neuroscience Methods / Journal of Selected Topics in Signal Processing, IEEE / Journal of the Optical Society of America A / Journal of Virtual Reality and Broadcasting, Dusseldorf University of Applied Sciences / Journal of Visual Communication and Image Representation / KSII Transactions on Internet and Information Systems / Machine Vision and Applications, Springer / Multimedia Systems, Springer / Multimedia Tools and Applications, Kluwer Academic Publications / Neurocomputing, Elsevier / Optics Express, The Optical Society / Pattern Recognition Letters, Elsevier / Pattern Recognition, Elsevier / Sensors, MDPI / Universal Access in the Information Society, Springer

### **Reviews for Conferences**

3DPVT 2006-2010, International Symposium on 3D Data Processing, Visualization and Transmission / 3DTV Conference, 2007-2016. Capture Transmission and Display of 3D Video / ACCV 2012, Asian

Conference in Computer Vision / AIME 2001, Conference on Artificial Intelligence in Medicine / CGI 2011, Computer Graphics International / CGVCVIP 2012-13 IADIS Computer Graphics, Visualization, Computer Vision and Image Processing / CVPR 2006-2017, IEEE Computer Vision and Pattern Recognition / DICTA 2015, International Conference on Digital Image Computing: Techniques and Applications / DSP 2009, International Conference on Digital Signal Processing / ECC 2014, European Control Conference / ECCV 2012-17 European Conference on Computer Vision / HCII 2013-17, Human Computer Interaction International / ICBISP 2015, IET International biomedical image and signal processing / ICCES 2013, International Conference on Computer Engineering & Systems / ICCV 2009-2017, International Conference in Computer Vision / ICCVG 2014, International Conference on Computer Vision and Graphics 2014 / ICIP 2008-2016, International Conference in Image Processing / ICME 2011-2016, IEEE International Conference on Multimedia and Expo / ICRA 2013-14, 17-18, International Conference on Robotics and Automation, 2013 / ICT4AgeingWell 2015, International Conference on Information and Communication Technologies for Ageing Well and e-Health / IEEE International Conference on Systems, Man, and Cybernetics 2012 / International Symposium on Ubiquitous Computing and Ambient Intelligence 2011 UCAM-I / IROS 2011-17, IEEE/RSJ International Conference on Intelligent Robots and Systems / ISVC 2008-2017, International Symposium on Visual Computing / MED 2011, Mediterranean Conference on Control and Automation / OMNIVIS 2008, Omnidirectional Vision, Camera Networks and Non-classical Cameras / SIBGRAPI 2014-17, Conference on Graphics, Patterns and Images / WACV 2012-18, Workshop on the Applications of Computer Vision / 23<sup>rd</sup> Conference on Medical Image Understanding and Analysis 2019

## **TECHNICAL EXPERIENCE AND DEMONSTRATORS**

- Bubble Measurement Software: Perpetual Software License for Department of Biomedical Engineering, Technion, Haifa, Israel.
- REMPE: Registration through Eye Modelling and Pose Estimation. A software system for retinal image registration. <http://www.ics.forth.gr/cvrl/rempe/>
- A system for the shape and motion analysis of drops and their 3D reconstruction from multiple views, with Polykarpos Karamaounas, as an outsource assignment for CoWet Marie Curie – ITN.
- An RGB-D dataset and evaluation methodology for detection and 6D pose estimation of texture-less objects (T-LESS) <http://cmp.felk.cvut.cz/t-less/>
- A public benchmark dataset for the registration of retinal images <http://www.ics.forth.gr/cvrl/fire/>
- A public benchmark dataset for the registration of multispectral images <http://www.ics.forth.gr/cvrl/msi/>
- A system for automatic generation of conference proceedings and printed material was developed throughout 2011-2015 with Polykarpos Karamaounas and utilized in the generation of the proceedings and printed matter for the following conferences where XZ served as publications chair: SiPS 2015, ICME 2013, ICME 2011, 3DTV 2007, 3DPVT 2006.
- The “Interactive Documents” system augments with multimedia content printed documents placed upon a planar surface. Long term installations: “*Info point*”, Tourism Office, Municipality of Heraklion, 2015. Temporary installation: “*ITB Berlin*” International Travel Trade Show, 5-9 March 2014. [\[WWW\]](#)
- “Wall Touch” comprises a large projection area that can be used by several visitors who wish to explore multifaceted information simultaneously. User interaction is provided by the recognition of touch of multiple fingers, hands, or specific objects. Visitors can explore multimedia assets, which can be moved around and magnified. [\[WWW\]](#)

- “Stater 360°” is an interactive system that enables the use of a steerable disk as an interactive, augmented display. The system is used for archaeological artifact exploration. Long term installations: “*Info point*”, Tourism Office, Municipality of Heraklion, 2015, the “*Alpha Bank Numismatic Collection*”, Archaeological Museum of Thessaloniki, 2014. [\[WWW\]](#)
- “Educational Card games” supports learning using physical cards and natural interaction. Long term installation: Rehabilitation Centre for Children with Disabilities, 2013. [\[WWW\]](#)
- PaperView is a system that augments physical surfaces digital information based on their location and orientation. Long term installations: National Research Foundation “*Eleftherios K. Venizelos*”, 2015 and in “*Info point*”, Tourism Office, Municipality of Heraklion, 2014. [\[WWW\]](#)
- “Be There Now!” is an interactive system immerses user in background sceneries and landscapes. Long term installations: “*Info point*”, Tourism Office, Municipality of Heraklion, 2015, Teloglion Foundation of Art - Aristotle University of Thessaloniki, 2014, “*Creative Crete*”, Region of Crete, airports and ports at Heraklion and Chania, 2013. Temporary installations: “*ITB Berlin*” International Travel Trade Show, Berlin, 5-9 March 2014, “*Days for Tourism*”, Region of Crete, 26-29 September 2013, Eleftheria Square, Heraklion. [\[WWW\]](#)
- The “Book of Ellie” augments a physical book and enables interaction through physical cards, to provide a playful approach to alphabet learning. [\[WWW\]](#)
- “Macrographia” is an interactive system that presents very large images, which visitors can explore by walking around in a room. Long term installation: “*Macedonia: from fragments to pixels*”, Archaeological Museum of Thessaloniki, 2010. [\[WWW\]](#)
- “Polyapton”, is a large interactive screen that can be used by several visitors who wish to explore multifaceted information on a subject at the same time. . Long term installation: “*Macedonia: from fragments to pixels*”, Archaeological Museum of Thessaloniki, 2010. [\[WWW\]](#)
- “SESIL” is a system enhancing physical books based on their content. [\[WWW\]](#)
- “Study Table” is an interactive table that augments physical books. [\[WWW\]](#)
- Project management and technical coordination of an exhibition of prototypical interactive systems with subjects drawn from ancient Macedonia, at the Archaeological Museum of Thessaloniki, with title “*Macedonia from fragments to pixels*”. <http://www.makedonopixels.org/>
- K. Tzevanidis, X. Zabulis, T. Sarmis, P. Koutlemanis, N. Kyriazis, A. Argyros, “*From Multiple Views to Textured 3D Meshes: a GPU-powered Approach*”, Technical Demo, European Conference in Computer Vision, 2010.
- "Retinal Images Analyzer" is an image analysis system for the measurement of retinal vessel width that was developed in collaboration with the 2nd Propaedeutic Dept Internal Medicine, Hippokration Hospital, School of Medicine, Aristotle University of Thessaloniki.
- A trinocular stereoscopic imaging device for the 3D imaging of psoriatic lesions, 2010, in collaboration with the Department of Dermatology, University of Crete.
- In 2009, a dataset for head pose estimation from multiple distant views, annotated with ground truth data was constructed and publicly availed at: <http://www.ics.forth.gr/cvrl/headpose/>
- An image analysis system for the measurement of size distribution, shape, motion of particles in densely concentrated samples, 2007, in collaboration with Division of Chemical Technology, School

of Chemistry, Aristotle University of Thessaloniki. The system was utilized by the Department of Mining and Minerals Engineering, Virginia Polytechnic Institute and State University.

- Technical contributions in parallel computing, on a 2400 CPU system at the Pittsburg Supercomputing Center, 2002-2004, for the real-time reconstruction of a scene from multiple images for tele-immersion. Participation at the “*Bandwidth Challenge*” of the Supercomputing Conference, Baltimore, 2002.
- An integrated system for forwarding email to mobile phones using SMS messages, during 1999-2000, in the context of work for FORTHnet S.A.
- Design and implementation of software infrastructures for the provision of Web services and distributed operating systems. Work in CMI-HTA of ICS FORTH and in FORTHnet, 1998-2000. Technology utilized in “*WebOnCOLL*” for real-time medical WWW services (ICS FORTH) and in “*Virtual Office*” for the provision of commercial services (FORTHnet).
- Implementation of a Java programming interface for the Semantic Index System (SIS) developed and distributed commercially by the Information Systems Laboratory of ICS-FORTH, 1998.

## **LANGUAGES**

Native in Greek. Excellent command of the English language, First Certificate in English, University of Cambridge. Simple command of the French language.

## **PUBLICATIONS**

### **Dissertations**

“*Perceptually Relevant Mechanisms for the Description and Retrieval of Visual Information*”, Doctoral Dissertation. Department of Computer Science. University of Crete. September 2001. Supervisor: Professor Stelios C Orphanoudakis.

“*Use of autonomous software entities in the resource management of an emergency prehospital medical system*”, Master Thesis, Department of Computer Science. University of Crete, June 1998. Supervisor: Professor Stelios C Orphanoudakis.

“*Porting the functionality P<sup>2</sup>C over the World Wide Web*”, Diploma Thesis, Department of Computer Science. University of Crete, June 1996. Supervisor: Professor Stelios C Orphanoudakis.

### **Editorial**

**X. Zabulis**, I. Cheng, N. Grammalidis, G. Triantafyllidis, and P. Zanuttigh, International Journal of Digital Multimedia Broadcasting, Volume 2010 (2010), Article ID 579514, 2 pages, doi:10.1155/2010/579514, Editorial, “*Advances in 3DTV: Theory and Practice*”.

### **Contributions to books**

1. N. Partarakis, **X. Zabulis**, M. Antona, C. Stephanidis, “*Transforming Heritage Crafts to engaging digital experiences*”, In Visual Computing for Cultural Heritage. F. Liarokapis, A. Voulodimos, N. Doulamis & Anastasios Doulamis (eds.), Springer, 2020.
2. E. Stefanidi, N. Partarakis, **X. Zabulis**, P. Zikas, G. Papagiannakis, N. Thalmann, “*TooltY: An approach for the combination of motion capture and 3D reconstruction to present tool usage in 3D environments*”, In Intelligent Scene Modelling and Human Computer Interaction, Thalmann N., Zhang J, Jiang X. (eds.), Springer, 2020.

3. C. Hernandez-Matas, A. Argyros and **X. Zabulis**, "*Retinal image preprocessing, enhancement, and registration*", In: Computational Retinal Image Analysis: Tools, Applications and Perspectives, Cover for Computational Retinal Image Analysis, Emanuele Trucco, Tom MacGillivray and Yanwu Xu, 59-77, doi: 10.1016/C2018-0-00865-8, ISBN 978-0-08-102816-2, Elsevier, 2019.
4. D. Grammenos, G. Drossis and **X. Zabulis**, "*Public Systems Supporting Noninstrumented Body-Based Interaction*", in Playful User Interfaces: Interfaces that Invite Social and Physical Interaction, Editor Anton Nijholt, ISBN: 978-981-4560-95-5, doi: 10.1007/978-981-4560-96-2\_2, pages 25-45, Series: Gaming Media and Social Effects (ISSN 2197-9685), Springer, 2014.
5. **X. Zabulis**, H. Baltzakis, A. A. Argyros, "*Vision-based Hand Gesture Recognition for Human Computer Interaction*", Chapter 34, in "The Universal Access Handbook", Lawrence Erlbaum Associates, Inc. (LEA), Series on "Human Factors and Ergonomics", ISBN: 978-0-8058-6280-5, pp 34.1 – 34.30, Jun 2009.
6. **X. Zabulis**, "*Utilization of the texture uniqueness cue in stereo*", pp 59-83 (ch 4), in Three-Dimensional Television: Capture, Transmission, and Display, editors Haldun M. Ozaktas and Levent Onural, ISBN 978-3-540-72531-2, Springer Verlag, 2008.
7. N. Kelshikar, **X. Zabulis**, J. Mulligan, K. Daniilidis, V. Sawant, S. Sinha, T. Sparks, S. Larsen, H. Towles, K. Mayer-Patel, H. Fuchs, J. Urbanic, K. Benninger, R. Reddy, and G. Huntoon, "*Real-Time Terascale Implementation of Tele-immersion*" pp 33 – 42, Lecture Notes in Computer Science, Volume 2660, ISSN: 0302-9743 2003, Springer-Verlag, Heidelberg, 2003.
8. **X. Zabulis**, and S. Orphanoudakis, "*Image Content Analysis and Description*", in State-of-the-Art in Content-Based Image and Video Retrieval, pp 1-21, Series: Computational Imaging and Vision, editors H. Burkhardt, H.-P. Kriegel and R. Veltkamp, ISBN 1-4020-0109-6, Kluwer Academic Publishers, October 2001.

### Refereed Journals

1. **X. Zabulis**, C. Meghini, N. Partarakis, C. Beisswenger, A. Dubois, M. Fasoula, V. Nitti, S. Ntoa, I. Adami, A. Chatziantoniou, V. Bartalesi, D. Metilli, N. Stivaktakis, N. Patsiouras, P. Doulgeraki, E. Karuzaki, E. Stefanidi, A. Qammaz, D. Kaplanidi, I. Neumann-Janßen, U. Denter, H. Hauser, A. Petraki, I. Stivaktakis, E. Mantinaki, A. Rigaki, G. Galanakis, "*Representation and Preservation of Heritage Crafts*", Sustainability, 12(4), 1461, 2020, doi: 10.3390/su12041461
2. **X. Zabulis**, C. Meghini, N. Partarakis, D. Kaplanidi, P. Doulgeraki, E. Karuzaki, E. Stefanidi, T. Evdemon, D. Metilli, V. Bartalesi, M. Fasoula, E. Tasiopoulou C. Beisswenger, "*What is needed to digitise knowledge on Heritage Crafts?*", Memoriamedia Review, 4(1):1-25, 2019, ISSN 2183-3753.
3. G. Lentaris, I. Stratakos, I. Stamoulias, D. Soudris, M. Lourakis, **X. Zabulis**, "*High-Performance Vision-Based Navigation on SoC FPGA for Spacecraft Proximity Operations*", IEEE Transactions on Circuits and Systems for Video Technology, 21 February 2019, doi: 10.1109/TCSVT.2019.2900802.
4. A. Triantafyllou, P. Anyfanti, E. Gkaliagkousi, **X. Zabulis**, A. Vamvakis, V. Gkolias, K. Petidis, S. Aslanidis, and S. Douma, "*Association of Urinary Sodium Excretion with Vascular Damage: A Local Kidney Effect, Rather Than a Marker of Generalized Vascular Impairment*", International Journal of Hypertension, 7620563, 2018. doi:10.1155/2018/7620563
5. P. Anyfanti, A. Triantafyllou, E. Gkaliagkousi, **X. Zabulis**, P. Dolgyras, V. Galanopoulou, S. Aslanidis, S. Douma, "*Urinary albumin excretion in rheumatoid arthritis is not associated with markers of vasculopathy in distal microvascular beds*", Microcirculation, Nov. 2018, doi: 10.1111/micc.12514.

6. I. Rios-López, P. Karamaoynas, **X. Zabolis**, M. Kostoglou, T. Karapantsios, "Image analysis of axisymmetric droplets in wetting experiments: a new tool for the study of 3D droplet geometry and droplet shape reconstruction", *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 2018, doi: 10.1016/j.colsurfa.2018.05.098.
7. I. Rios-Lopez, S. Evgenidis, M. Kostoglou, **X. Zabolis**, T. Karapantsios, "Effect of initial droplet shape on the tangential force required for spreading and sliding along a solid surface", *Colloids and Surfaces A*, 549 (2018) 164–173. doi: 10.1016/j.colsurfa.2018.04.004.
8. P. Anyfanti, E. Gkaliagkousi, A. Triantafyllou, **X. Zabolis**, V. Galanopoulou, S. Aslanidis, S. Douma, "Dermal capillary rarefaction as a marker of microvascular damage in patients with rheumatoid arthritis: association with inflammation and disorders of the macrocirculation", *Microcirculation*, e12451, March 2018, doi: 10.1111/micc.12451.
9. G. Lentaris, K. Maragos, I. Stratakos, L. Papadopoulos, O. Papanikolaou, D. Soudris, M. Lourakis, **X. Zabolis**, D. Gonzalez-Arjona, and G. Furano. "High-Performance Embedded Computing in Space: Evaluation of Platforms for Vision-Based Navigation", *Journal of Aerospace Information Systems*, February 20, 2018, doi: 10.2514/1.I010555
10. P. Koutlemanis, **X. Zabolis**, "Tracking of multiple planar projection boards for interactive mixed-reality applications", *Multimedia Tools and Applications*, p. 1–31, Oct, 2017. doi: 10.1007/s11042-017-5313-6
11. P. Anyfanti, A. Triantafyllou, E. Gkaliagkousi, N. Koletsos, G. Athanasopoulos, **X. Zabolis**, V. Galanopoulou, S. Aslanidis, S. Douma. "Retinal vessel morphology in rheumatoid arthritis: association with systemic inflammation, subclinical atherosclerosis and cardiovascular risk", *Microcirculation*. 2017 Sep 19. doi: 10.1111/micc.12417.
12. A. Zacharopoulos, K. Hatzigiannakis, P. Karamaoynas, V. Papadakis, M. Andrianakis, K. Melessanaki, **X. Zabolis**, "A method for the registration of spectral images of paintings and its evaluation", *Journal of Cultural Heritage*, vol. 29, p.10-18, 2018, doi: 10.1016/j.culher.2017.07.004
13. C. Hernandez-Matas, **X. Zabolis**, A. Triantafyllou, P. Anyfanti, S. Douma, A. Argyros, "FIRE: Fundus Image Registration Dataset", *Journal for Modeling in Ophthalmology* 2017;4:16-28.
14. **X. Zabolis**, M. Lourakis, P. Koutlemanis, "Correspondence-free pose estimation for 3D objects from noisy depth data", *The Visual Computer*, Issue 2, pp 193–211, (2016), doi: 10.1007/s00371-016-1326-9
15. C. Hernandez-Matas, **X. Zabolis**, A. Argyros, "Retinal Image Registration under the Assumption of a Spherical Eye", *Computerized Medical Imaging and Graphics*, 23 June 2016, doi:10.1016/j.compmedimag.2016.06.006.
16. A. Ntelidakis, **X. Zabolis**, D. Grammenos, P. Koutlemanis, "Touch detection for planar interactive displays based on lateral depth views", *Multimedia Tools and Applications*, pp 1–25, 28 June 2016, doi: 10.1007/s11042-016-3695-5
17. A. Triantafyllou, P. Anyfanti, G. Triantafyllou, **X. Zabolis**, S. Aslanidis, S. Douma, "Impaired metabolic profile is a predictor of capillary rarefaction in a population of hypertensive and normotensive individuals", *Journal of the American Society of Hypertension*, May 2016, doi:10.1016/j.jash.2016.04.007
18. S. Crespo-Garcia, N. Reichhart, C. Hernandez-Matas, **X. Zabolis**, N. Kociok, C. Brockmann, A.M. Jousseaume, O. Strauss, "In Vivo Analysis of the Time and Spatial Activation Pattern of Microglia in the Retina Following Laser-Induced Choroidal Neovascularization", *Experimental Eye Research* (2015),



doi: 10.1016/j.exer.2015.07.012.

19. A. Triantafyllou, P. Anyfanti, E. Gavriilaki, **X. Zabulis**, E. Gkaliagkousi, K. Petidis, G. Triantafyllou, V. Gkolias, A. Pyrpasopoulou, S. Douma, “*Association Between Retinal Vessel Caliber and Arterial Stiffness in a Population Comprised of Normotensive To Early-Stage Hypertensive Individuals*”, American Journal of Hypertension, 23 May 2014. doi:10.1093/ajh/hpu074.
20. A. Triantafyllou A, P. Anyfanti P, **X. Zabulis**, E. Gavriilaki , P. Karamaounas , E. Gkaliagkousi , K. Petidis , A. Pyrpasopoulou , C. Girasis, S. Aslanidis , S. Douma S, “*Accumulation of microvascular target organ damage in newly diagnosed hypertensive patients*”, Journal of the American Society of Hypertension, 20 Apr 2014, doi: 10.1016/j.jash.2014.04.008.
21. D. Michel, **X. Zabulis**, A. A. Argyros, "Shape from Interaction", Machine Vision and Applications, 25(4):1077-1087, May 2014. doi:10.1007/s00138-014-0602-9.
22. G. Margetis, **X. Zabulis**, S. Ntoa, P. Koutlemanis, E. Papadaki, M. Antona, C. Stephanidis, "Enhancing education through natural interaction with physical paper", Universal Access in the Information Society, Special Issue: "User Experience and Access using Augmented and Multimedia Technologies", 1-24, 2014, doi: 10.1007/s10209-014-0365-0.
23. P. Koutlemanis, A. Ntelidakis, **X. Zabulis**, D. Grammenos, I. Adami, "A Steerable Multitouch Display for Surface Computing and its Evaluation", International Journal on Artificial Intelligence Tools, Vol. 22, No. 6 (2013) 1360016, World Scientific Publishing Company. doi: 10.1142/S0218213013600166
24. D. Grammenos, **X. Zabulis**, D. Michel, P. Paderleris, T. Sarmis, G. Georgalis, P. Koutlemanis, K. Tzevanidis, A. A. Argyros, M. Sifakis, P. Adam-Veleni, C. Stephanidis, "A Prototypical Interactive exhibition for the Archaeological Museum of Thessaloniki", International Journal of Heritage in the Digital Era, 2(1):75-99, 2013.
25. A. Tosca, A. Kokolakis, K. Lasithiotakis, A. Zacharopoulos, **X. Zabulis**, I. Marnelakis, J. Ripoll, C. Stephanidis, "Development of a three-dimensional surface imaging system for melanocytic skin lesion evaluation", Journal Biomedical Optics, 18 (1), 016009 (January 07, 2013), doi: 10.1117/1.JBO.18.1.016009.
26. A. Triantafyllou, M. Doulas, P. Anyfanti, E. Gkaliagkousi, **X. Zabulis**, K. Petidis, E. Gavriilaki, P. Karamaounas, V. Gkolias, A. Pyrpasopoulou, A. B. Haidich, C. Zamboulis, S. Douma, "Divergent retinal vascular abnormalities in normotensive persons and patients with never-treated, masked, white coat hypertension", American Journal of hypertension, doi: 10.1093/ajh/hps040, 7 January 2013.
27. **X. Zabulis**, D. Grammenos, T. Sarmis, K. Tzevanidis, P. Paderleris, P. Koutlemanis, A. Argyros, "Multicamera human detection and tracking supporting natural interaction with large-scale displays", Machine Vision and Application, Issue 2, pp 319–336, 2012, doi: 10.1007/s00138-012-0408-6 .
28. G. Margetis, **X. Zabulis**, P. Koutlemanis, M. Antona, and C. Stephanidis, "Augmented interaction with physical books in an Ambient Intelligence learning environment". Multimedia Tools and Applications, published online January 2012, doi: 10.1007/s11042-011-0976-x.
29. M. Papara, **X. Zabulis**, T. D. Karapantsios, "Container effects on the free drainage of wet foams", Chemical Engineering Science, 64:1404 – 1415, 2009.
30. **X. Zabulis** and G. Floros, "Modulating the shape and size of backprojection surfaces to improve accuracy in volumetric stereo", EURASIP Journal on Advances in Signal Processing, Volume 2009,

31. A. Alatan, Y. Yemez, U. Gdkbay, **X. Zabulis**, K. Mller, . Erdem, C. Weigel, and A. Smolic, "*Scene Representation Technologies for 3DTV - A Survey*", IEEE Transactions on Circuits and Systems for Video Technology, Special Issue on Multi-view Video Coding and 3DTV, 17(11):1587-1605, 2007.
32. E. Stoykova, A. Alatan, P. Benzie, N. Grammalidis, S. Malassiotis, J. Ostermann, S. Piekh, V. Sainov, C. Theobalt, T. Thevar and **X. Zabulis**, "3D Time-varying Scene Capture Technologies - A Survey", IEEE Transactions on Circuits and Systems for Video Technology, Special Issue on Multi-view Video Coding and 3DTV, 17(11):1568-1586, 2007.
33. **X. Zabulis**, M. Papara, A. Chatziargyriou, T. D Karapantsios, "*Detection of densely dispersed spherical bubbles in digital images based on a template matching technique. Application to wet foams*", Colloids and Surfaces A: Physicochemical and Engineering Aspects, 309(1-3): 96-106, 2007.
34. **X. Zabulis**, J. Sporryng, S. C. Orphanoudakis, "*Perceptually Relevant and Piecewise Linear Matching of Silhouettes*", Pattern Recognition, 38:75-93, 2005 (to appear).
35. **X. Zabulis**, B. T. Backus. "*The Starry Night texture*", Journal of the Optical Society of America A, 21(11):2049-2060, November 2004.
36. J. Mulligan, **X. Zabulis**, N. Kelshikar, and K. Daniilidis, "*Stereo-based Environment Scanning for Immersive Telepresence*", IEEE Transactions on Circuits and Systems for Video Technology, Special Issue on Immersive Telepresence, 14(3):304-320, March 2004.ISSN: 1051-8215.
37. C. Chronaki, D. G. Katehakis, **X. Zabulis**, M. Tsiknakis, S. C. Orphanoudakis, "*WebOnCOLL: Medical Collaboration in Regional Healthcare Networks*", IEEE Transactions on Information Technology in Biomedicine, 1(4):257-269, December 1997.
38. C. Chronaki, **X. Zabulis**, and S.C. Orphanoudakis, "*I<sup>2</sup>Cnet Medical Image Annotation Service*", Medical Informatics, Special Issue, 22(4), 337-347, August 1997.

#### **Proceedings of refereed conferences and workshops**

1. Stefanidi, E., Partarakis N., **Zabulis, X.**, Papagiannakis, G., "*An Approach for the Visualization of Crafts and Machine Usage in Virtual Environments*", ACHI 2020, International Conference on Advances in Computer-Human Interactions, Valencia, Spain, 22-26, March 2020.
2. A. Rigaki, N. Partarakis, **X. Zabulis**, C. Stephanidis, "*An Approach Towards Artistic Visualizations of Human Motion in Static Media Inspired by the Visual Arts*", ACHI 2020, International Conference on Advances in Computer-Human Interactions, Valencia, Spain, 22-26, March 2020.
3. G. Galanakis, **X. Zabulis**, A. A. Argyros, "*Novelty Detection for Person Re-identification in an Open World*", In International Conference on Computer Vision Theory and Applications (VISAPP 2019), Scitepress, Prague, Czech Republic, 25-27 February 2019.
4. T. Hodan, F. Michel, E. Brachmann, W. Kehl, A. Buch, D. Kraft, B. Drost, J. Vidal, S. Ihrke, X. Zabulis, C. Sahin, F. Manhardt, F. Tombari, T. Kim, J. Matas, C. Rother, "*6D Object Pose Estimation Benchmark*", 15th European Conference on Computer Vision (ECCV), September 8 – 14, 2018.
5. N. Partarakis, G. Margetis, E. Zidianakis, M. Sifakis, G. Drossis, C. Birliraki, A. Chatziantoniou, V. Neroutsou, S. Paparoulis, T. Toutountzis, P. Koutlemanis, **X. Zabulis**, S. Ntoa, D. Gramenos, E. Apostolakis, E. Stamatakis, M. Antona, C. Stephanidis, "*Interactive City Information Point: Your*

- guide to Heraklion City*", International Conference on Human computer interaction, 2018, Las Vegas, July 2018.
6. N. Partarakis, E. Kontaki, E. Zidianakis, G. Drossis, C. Birliraki, G. Metaxakis, A. Barka, V. Poutouris, G. Mathioudakis, I. Zidianaki, A. Chatziantoniou, P. Koutlemanis, **X. Zabulis**, G. Margetis, D. Gramenos, E. Apostolakis, E. Stamatakis, G. Paparoulis, M. Antona, C. Stephanidis, "*Digital Heritage Technology at the Archaeological Museum of Heraklion*", International Conference on Human computer interaction, 2018, Las Vegas, 15-20, July 2018.
  7. M. Aviles, M. Lourakis, G. Lentaris, **X. Zabulis**, I. Stamoulias, K. Maragos, D. Mora, D. Soudris, "*SPARTAN: Vision-based Autonomous Navigation System for fast traversal planetary Rovers*", International Symposium on Artificial Intelligence, Robotics and Automation in Space, Madrid, Spain, 4-6 June, 2018.
  8. D. Grammenos, **X. Zabulis**, A. Chatziantoniou, Z. Stefanidi, I. Adami and V. Neroutsou, "*COIN-O-RAMA: Designing an Interactive Exhibit for Exploring and Engaging with Coin Exhibitions*", Pervasive Technologies Related to Assistive Environments (PETRA), June 26-29, Corfu, Greece, 2018.
  9. M. Lourakis, **X. Zabulis**, "*Model-Based Visual Tracking of Orbiting Satellites Using Edges*", IEEE/RSJ International Conference on Intelligent Robots and Systems, Vancouver, Canada, September 24–28, 2017.
  - 10.G. Lentaris, I. Stratakos, I. Stamoulias, K. Maragos, D. Soudris, M. Lourakis, **X. Zabulis**, D. Gonzalez-Arjona, "*Project HIPNOS: Case Study of High Performance Avionics for Active Debris Removal in Space*", Proceedings of IEEE Computer Society Annual Symposium on VLSI, ISVLSI, Bochum, Germany, 3-5 July 2017.
  - 11.C. Hernandez-Matas, **X. Zabulis**, A. Argyros, "*An Experimental Evaluation of the Accuracy of Keypoints-Based Retinal Image Registration*", 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Jeju Island, Korea, July 11-15, 2017.
  - 12.M. Lourakis, **X. Zabulis**, "*Satellite Visual Tracking for Proximity Operations in Space*", 14th Symposium on Advanced Space Technologies in Automation and Robotics (ASTRA'17), Leiden, the Netherlands, June 20-22, 2017.
  - 13.T. Hodaň, P. Haluza, Š. Obdržálek, J. Matas, M. Lourakis, **X. Zabulis**, "*T-LESS: An RGB-D Dataset for 6D Pose Estimation of Texture-less Objects*", IEEE Winter Conference on Applications of Computer Vision (WACV), March 27-29, 2017, Santa Rosa, USA.
  - 14.C. Hernandez-Matas, **X. Zabulis**, A. Argyros, "*Retinal Image Registration through Simultaneous Camera Pose and Eye Shape Estimation*", 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC) in Walt Disney World Resort, Orlando, FL, USA, August 17-20, 2016.
  - 15.A. Ntelidakis, **X. Zabulis**, D. Grammenos and P. Koutlemanis, "*Lateral touch detection and localization for interactive, augmented planar surfaces*", International Symposium on Visual Computing, Las Vegas, Nevada, U.S.A., 2015.
  - 16.T. Hodan, **X. Zabulis**, M. Lourakis, S. Obdrzalek and J. Matas, "*Detection and Fine 3D Pose Estimation of Textureless Objects in RGB-D Images*", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), pp 4421-4428, Hamburg, Germany, September 28 - October 2, 2015.

- 17.C. Hernandez-Matas, **X. Zabulis**, A.A. Argyros, "Retinal Image Registration Based on Keypoint Correspondences, Spherical Eye Modeling and Camera Pose Estimation", International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Milan, Italy, August 25-29, 2015.
- 18.G. Drossis, A. Ntelidakis, D. Grammenos, **X. Zabulis**, C. Stephanidis, "Immersing Users in Landscapes Using Large Scale Displays in Public Spaces", Distributed, Ambient, and Pervasive Interactions (DAPI), Held as Part of HCI International 2015, Los Angeles, CA, U.S.A., August 2-7, 2015.
- 19.**X. Zabulis**, M. Lourakis, P. Koutlemanis, "3D Object Pose Refinement in Range Images", International Conference on Computer Vision Systems (ICVS), 6-9 July, 2015, Copenhagen, Denmark.
- 20.G. Lentaris, I. Stamoulias, D. Diamantopoulos, K. Maragos, K. Siozios, D. Soudris, M. Avilés Rodríguez, M. Lourakis, **X. Zabulis**, I. Kostavelis, L. Nalpantidis, E. Boukas, A. Gasteratos, "SPARTAN/SEXTANT/COMPASS: Advancing Space Rover Vision via Reconfigurable Platforms", 475-486, Applied Reconfigurable Computing - 11th International Symposium, ARC 2015, Bochum, Germany, April 13-17, 2015.
- 21.A. Kazakidi, **X. Zabulis**, D. Tsakiris, "Vision-based 3D motion reconstruction of octopus arm swimming and comparison with an 8-arm underwater robot", Proceedings of 2015 IEEE International Conference on Robotics and Automation (ICRA), May 26-30, 2015, Washington State Convention Center, Seattle, Washington. doi:10.1109/ICRA.2015.7139340.
- 22.**X. Zabulis**, M. I. A. Lourakis, S. S. Stefanou, "3D Pose Refinement Using Rendering and Texture-Based Matching", International Conference on Computer Vision and Graphics, International Conference on Computer Vision and Graphics 2014, Warsaw, Poland, September 15-17, 2014. Also in Lecture Notes in Computer Science Volume 8671, 2014, pp 672-679, ISBN 978-3-319-11330-2.
- 23.C. Hernandez-Matas, **X. Zabulis**, "Super Resolution for Fundoscopy Based on 3D Image Registration", 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Chicago, August 26-30, 2014. doi:10.1109/EMBC.2014.6945077.
- 24.G. Galanakis, P. Katsifarakis, **X. Zabulis**, I. Adami. "Recognition of Simple Head Gestures Based on Head Pose Estimation Analysis", In AMBIENT 2014, The Fourth International Conference on Ambient Computing, Applications, Services and Technologies, pp. 88-96, August 24 - 28, 2014 - Rome, Italy, 2014.
- 25.G. Galanakis, **X. Zabulis**, P. Koutlemanis, S. Paparoulis, V. Kouroumalis, "Tracking persons using a network of RGBD cameras", Proceedings of the 7th International Conference on Pervasive Technologies for Assistive Environments - PETRA 2014 Workshop, March 10-16, Rhodes, Greece, 2014
- 26.E. Papadaki, **X. Zabulis**, S. Ntoa, G. Margetis, P. Koutlemanis, P. Karamaounas, C. Stephanidis, "The Book of Ellie: An Interactive Book for Teaching the Alphabet to Children", IEEE International Conference on Multimedia and Expo Workshops, July 15-19, 2013, San Jose, California, U.S.A.
- 27.G. Margetis, D. Grammenos, **X. Zabulis**, C. Stephanidis, "iEat: An Interactive Table for Restaurant Customers' Experience Enhancement", 15th International Conference on Human-Computer Interaction: (8):666-670, 21-26 July 2013, Las Vegas, Nevada, U.S.A.
- 28.M. Lourakis, **X. Zabulis**, "Model-based pose estimation for rigid objects", 9th International Conference on Computer Vision Systems, St. Petersburg, Russia on July 16-18, 2013. Lecture Notes in Computer Science Volume 7963, 2013, pp 83-92.

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30. M. Lourakis, **X. Zabulis**, "*Accurate Scale Factor Estimation in 3D Reconstruction*", 15th Computer Analysis of Images and Patterns, York-UK 27-29, August 2013. Lecture Notes in Computer Science Volume 8047, 2013, pp 498-506.
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5. **X. Zabulis**, D. Grammenos, A. A. Argyros, D. Sifakis and C. Stephanidis, "*Macedonia: from fragments to Pixels*", ERCIM NEWS, 25-26, July 2011.
6. A. Kokolakis, K. Lasithiotakis, S. Psycharakis, K. Krasagakis, S. Kruger-Krasagakis, **X. Zabulis**, T. Sarmis, P. Panteleris, G. Georgiadis, G. Karatzanis, C. Stephanidis, A. Tosca, "A Novel Surface 3-D Imaging System for Psoriatic Lesions", 2<sup>nd</sup> Panhellenic Symposium of Investigative Dermatology.
7. C. Stephanidis, **X. Zabulis**, D. Grammenos, M. Sifakis, (2010, 19 November) "*Ambient Intelligent Technologies and their application in the field of Culture: Premiere in the Archaeological Museum of Thessaloniki*". Workshop on Museological trends and approaches. The recent Italian and Greek experience, Thessaloniki, Greece.
8. T. Sarmis, **X. Zabulis** and A. A. Argyros, "*A Software Platform for the Acquisition and Online Processing of Images in a Camera Network*", ERCIM NEWS, No 76, Special issue "The Sensor Web", 45-46, January 2009.
9. C. Chronaki, **X. Zabulis**, M. Tsiknakis and S. C. Orphanoudakis, "*Web - based Medical Services in the Regional Health Network of Crete*", ERCIM NEWS, No 29, 28-29, April 1997.

### **Invited talks**

- 19 December 2019, "*The Mingei H2020 project*", 2<sup>nd</sup> open discussion for the establishment of Heraklion as an international gastronomic destination, organised by the Municipality of Heraklion, Crete, Greece.
- 22 November 2019, "*Representation and Presentation of Heritage Crafts*", ICOM European conference, Acropolis Museum in Athens, Greece.
- 2 October 2019, "*The Mingei H2020 project*", "EMbleMatiC ecojourneys: developing alternative sustainable tourism in Mediterranean hinterland areas", conference organised by the EMbleMatiC RIS project, Anogia, Crete, Greece.
- 4 May 2017, "*Beyond museum guides: smart interaction with cultural heritage*" (Keynote talk), Hyperheritage International Symposium, Smart Heritage, Arab American University - Jenin, Palestine.
- 20 February 2017, "*2D-Drop shape/motion analysis, 3D-Drop image reconstruction from multiple views*", CoWet Marie-Curie ITN Training School in Thessaloniki/Metsovo.
- 10 June 2014, "*Image filtering, features and scale*", 3<sup>rd</sup> REVAMMAD Marie-Curie ITN Training Event, Hersonissos, Crete, Greece.
- 9 June 2014, "*Image processing on the retina and on the computer*", 2<sup>nd</sup> REVAMMAD Marie-Curie ITN Training Event, Hersonissos, Crete, Greece.
- 4 December 2013, "*Clinical aspects of Retinal Image Analysis*", 1<sup>st</sup> REVAMMAD Marie-Curie ITN Training Event, Lincoln, UK.

- 20 September 2013, “*Ambient Intelligence*”, PechaKucha Vol 4, Heraklion.
- 13 July 2013, “*Interacting with the World*”, Foundation for Research and Technology – Hellas, FORTH Information Day, Heraklion, Crete.
- 10 November 2011, World Usability day celebration, “*Beyond the desktop: Designing interactive museum exhibits that combine learning with entertainment*”. Cyprus University of Technology, Limassol, Cyprus.
- 19 November 2010, Stephanidis, C., X. Zabulis, D. Grammenos, & Sifakis, M. “*Ambient Intelligent Technologies and their application in the field of Culture: Premiere in the Archaeological Museum of Thessaloniki*”. Workshop on Museological trends and approaches. The recent Italian and Greek experience, Thessaloniki, Greece.
- 15 April 2009, University of Coimbra, Department of Electrical Engineering, Invited talk, “*3D head pose estimation from multiple distant views*”.
- 19 May 2008, “*FORTH-ICS internal RTD Programme*”, meeting of the Sensor Web ERCIM working group, University College Dublin.
- 16 September 2005: Presentation of Call 172 of the Ministry of Finances on “*Documentation, Development and Promotion of Greek Civilization*” “*Τεκμηρίωση, Αξιοποίηση και Ανάδειξη του Ελληνικού Πολιτισμού*”, Concert Hall, Thessaloniki (in Greek).
- 11 November 2003: Invited talk at Informatics department, Aristotle University of Thessaloniki, “*Multi-camera reconstruction based on surface normal estimation and best viewpoint selection*”.
- 29 October 2003: Invited talk at Institute of Computer Science, Foundation for Research and Technology Hellas “*Multi-camera reconstruction based on surface normal estimation and best viewpoint selection*”.
- 18 - 25, October, 2002: Presentation of a real-time tele-immersion system at the “Bandwidth Challenge” in conjunction with Super Computing 2002 Baltimore, U.S.A.
- 11 December, 2001: Invited talk at GRASP Laboratory, University of Pennsylvania, “*Perceptually Relevant Retrieval of Visual Information*”.
- 15 June, 2001: Invited talk at European Centre of Excellence CWI, Amsterdam, The Netherlands, “*Description, Management, and Retrieval of Visual Information*”.
- 14 May, 2001: Invited talk at University of Pittsburgh, Computer Science Department “*An introduction to linked lists*”.
- 15 May, 2001: Invited talk at Neurobiology Department, Duke University, Durham, U.S.A., “*Visual Information Management and Retrieval*”.
- March 2000, Talk at EU network meeting VIRGO TMR Genoa, Italy, “*Scale-Summarized Representation*”.
- 5 - 10 December 1999: participation and presentation of part of PhD thesis at Computer Science seminar in Dagstuhl, Germany, No. 99491, “*Content-Based Image and Video Retrieval*”.
- April 1997 presentation of part of MSc thesis in meeting of the EU project HECTOR in Milan, Italy.

## References in the news

- Mingei H2020, [19 December 2019, statement on local TV channel was provided (CRETA-TV) on open discussion for the establishment of Heraklion as an international gastronomic destination, organised by the Municipality of Heraklion, Crete, Greece.] [19 December 2019, [Creta-Live News, "Herarklion a gastonomic destination"](#)] [[Interview with Maria Fasoula, Radio Chios, September 2019](#)]
- "[Ρομποτικό χταπόδι στις ελληνικές θάλασσες!](#)", Το Βήμα – Science, 2 November 2014.
- "[Νοημοσύνη διάχυτη στον χώρο](#)", Το Βήμα – Science, 30 January 2012.
- "[Διεθνής βράβευση για διάγνωση της υπέρτασης](#)", Ελευθεροτυπία, 20 December 2011.
- "[Το ΙΤΕ δείχνει το... μέλλον των αρχαίων](#)", Νέα Κρήτη, 20 December, 2010.
- Retinal Image Analysis: [[20/12/2011 Ελευθεροτυπία](#)] [[31/1/2012 Αγγελιοφόρος](#)] [[30/1/2012 E-Typos](#)] [[2/2/2012 Ιατρικός Τύπος](#)]
- Ambient Intelligence, in the **press**: [[Καθημερινή 22/9/2014](#)] [[Έθνος 3/6/2015](#)] [[Νέα Κρήτη 16/12/2014](#)] [[21/11/2014 Grece Hebdo](#)] [[21/9/2014 CretaLive](#)] [[17/6/2015 Πατρίς](#)] and on **television**: [[1/10/2014 SKAI-TV](#)]
- Coverage of the prototype exhibition "[Macedonia from fragments to pixels](#)", in the press: [[Ελεύθερη Ώρα 03/11/2010](#)] [[2/11/2010 Το Βήμα](#)] [[2/11/2010 Καθημερινή](#)] [[2/11/2010 Τα Νέα](#)] [[2/11/2010 Έθνος](#)] [[29/10/2010 Ελευθεροτυπία](#)] [[2/11/2010 Τύπος Θεσσαλονίκης](#)] [[2/11/2010 Μακεδονία](#)] [[2/11/2010 Αγγελιοφόρος](#)] [[1/11/2010 Η Ναυτεμπορική](#)] [[2/11/2010 Ο Φιλελεύθερος](#)] [[3/11/2010 Ελεύθερος](#)] [[2/11/2010 Τέχνες](#)] in electronic media: [[2/11/2010 IN.GR](#)] [[2/11/2010 Μουσικολογία](#)] [[1/11/2010 WTMNEWS.GR](#)] [[2/11/2010 Protagon](#)] and on television: [[2/11/2010 SKAI-TV](#)]
- Tele-immersion: [[20/11/2002 Science Daily](#)] [[18/11/2002 EurekAlert!](#)]