

George P. Pavlidis

Curriculum Vitae

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Date of birth: March 6, 1970

Place of birth: Kavala, Greece

Nationality: Greek

Occupation: Research Director
Athena - Research and Innovation Center in Information, Communication and Knowledge Technologies
ILSP - Institute for Language and Speech Processing
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1 Degrees

- 2005 PhD in Electrical & Computer Engineering, Dept. Of Electrical and Computer Engineering, Polytechnic School, Democritus University of Thrace
Dissertation title: “Segmentation of colour images”
- 1995 Diploma in Electrical Engineering, Dept. Of Electrical and Computer Engineering, Polytechnic School, Democritus University of Thrace
Dissertation title: “Motion simulation and control panel for an underwater remotely operated vehicle”

1.1 Lifelong learning

- [LLL-1] Online Course “Introduction to Grid Computing”, Nov. 2013 - Feb. 2014, organised by SURFsara, Dutch HPC, e-Science support center.
- [LLL-2] “Free your creativity - Innovate”, 23 Oct. 2013, Xanthi, Greece, organized by the Innovation & Entrepreneurship Unit, Employment & Career Office of DUTH and supported by the Region of East Macedonia & Thrace.
- [LLL-3] “Autonomous Micro Aerial Vehicles: Design, Perception, and Control”, 4-7 July 2011, ETH Zurich, Switzerland, organized by the Robotics Summer Schools at ETHZ.
- [LLL-4] “Geographical Information Systems”, 7-8 Apr. 2005, Xanthi, Greece, organized by MDS Marathon Data Systems.

2 Academic, Research and Innovation Professional Experience

2.1 Current positions

- Since 2015 **Institute for Language and Speech Processing / Athena - Research and Innovation Centre in Information, Communication and Knowledge Technologies**
Research Director (Researcher A’) - Scientific discipline: “Image processing and multimedia applications in culture and education”
http://www.ilsp.gr/index.php?option=com_jresearch&view=member&task=show&id=96&Itemid=156
- Since 2015 **University of the Aegean**
Adjunct Faculty member, post graduate programme “Applied Archaeological Sciences
<http://archsci.aegean.gr/index.php/ellinika/>
- Since 2012 **Department of Electrical Engineering, Technological Educational Institution of East Macedonia & Thrace (Kavala)**
Adjunct Faculty member, post-graduate programme ‘MSc in Innovation in Technology & Entrepreneurship’
<http://msc.tie.teikav.edu.gr/index.php/en/faculty-members>
- Since 1995 **Electrical Engineer freelancer with main activities in informatics (consulting, analysis/programming/development, education)**

2.2 Past positions

- 2012 - Institute for Language and Speech Processing (after the incorporation of the
2015 Cultural and Educational Technology Institute) / Athena - Research and
Innovation Centre in Information, Communication and Knowledge Technologies
Principal Researcher (Researcher B')
Scientific discipline: "Image processing and multimedia applications in culture and
education"
- 2011 - Dept. Of Informatics Engineering, Technological Educational Institution of
2013 Central Macedonia (Serres)
Adjunct Lecturer, undergraduate courses "Pattern Recognition - Neural Networks",
"Digital Signal Processing"
- 2009 - Cultural and Educational Technology Institute / Athena - Research and Innovation
2012 Centre in Information, Communication and Knowledge Technologies
Principal Researcher (Researcher B')
Scientific discipline: "Image processing and multimedia applications in culture and
education"
- 2006 - Cultural and Educational Technology Institute / Athena - Research and Innovation
2009 Centre in Information, Communication and Knowledge Technologies
Associate Researcher (Researcher C')
Scientific discipline: "Image processing and multimedia applications in culture and
education"
- 2006- Dept. Of Electrical and Computer Engineering, Democritus University of Thrace
2009 *Adjunct Lecturer*, undergraduate course "Multimedia"
- 2007- Dept. Of Electrical and Computer Engineering, Democritus University of Thrace
2008 *Adjunct Lecturer*, undergraduate course "Multimedia"
- 2004- Dept. Of Architectural Engineering, Democritus University of Thrace
2005 *Adjunct Lecturer*, undergraduate course "CAD II"
- 2004- *Hellenic Organization of Vocational Education and Training / Institute of
2005 Vocational Training of Xanthi, Greece*
Adjunct Lecturer, course "Usage of Computers"
- 2002- Cultural and Educational Technology Institute / Athena - Research and Innovation
2006 Centre in Information, Communication and Knowledge Technologies
Special Functional Scientist - Multimedia Engineer
- 1996- *Research Committee / Democritus University of Thrace*
1998 *Project Management staff*
- 1992- *IT Freelancer with main activities in analysis/programming and IT training*
1995

3 Scientific and research activity

3.1 Honours, distinctions and awards

- [AWD1] Session 4 chair at the international symposium “VIRTUAL ARCHAEOLOGY: Museums & Cultural Tourism”, (<http://vamct13.syros.aegean.gr/programme-final.pdf>), Sept. 27, 2013, Delphi, Greece.
- [AWD2] Appointed expert of Cultural Content ‘Futures Workshop’ organized as part of the first SEE Regional Foresight exercise on ICT Research, Development and Innovation, Mar. 21, 2013, Sofia, Bulgaria.
- [AWD3] First 3D cultural content in Europeana by the Multimedia Research Group of the Athena Research Center
[http://www.europeana.eu/portal/search.html?qf=DATA_PROVIDER%3a%22Athena%20R.I.C.,%20ILSP,%20Xanthi,%20\(former%20Cultural%20and%20Educational%20Technology%20Institute%20\(CETI\)%20\)%22&rows=24](http://www.europeana.eu/portal/search.html?qf=DATA_PROVIDER%3a%22Athena%20R.I.C.,%20ILSP,%20Xanthi,%20(former%20Cultural%20and%20Educational%20Technology%20Institute%20(CETI)%20)%22&rows=24)
- [AWD4] Most cited paper at the Elsevier Journal of Cultural Heritage (<http://www.sciencedirect.com/science/article/pii/S129620740600121X>) (during the 5-year cycle of referencing at Elsevier) - paper: “Methods for 3D digitization of Cultural Heritage”
- [AWD5] Award of Excellence for successful completion and quality of the project results [Digitech III-2](#) results by the “Hellenic Information Society Programme”, 2009.
- [AWD6] Ericsson Awards of Excellence in Telecommunications for the doctoral dissertation, Jun. 10, 2005.

3.2 Distinguished lectures

- [INV1] Invited talk at the Collaborative Conference on 3D Research (CC3DR) 2014, Jun. 23-27, 2014, Incheon/Seoul, South Korea.
- [INV2] Invited talk at the Seminar “Diagnosis Techniques in the Art Conservation Science”, organized by the Cross-disciplinary Postgraduate Programme of Aristotle University of Thessaloniki, 17-19 Feb. 2012, Thessaloniki, Greece.
- [INV3] Invited organization and talk by the IEEE Student Branch of DUTH for a crash-course seminar in “Digital photography and image processing”, 2011, Xanthi, Greece.
- [INV4] Invited talk at the Dept. of History and Archaeology of Aristotle University of Thessaloniki, post-graduate course: “New technologies in ancient Greek pottery”, 2009, Thessaloniki, Greece.
- [INV5] Speech on “Three dimensional digital recording” under the roundtable on “Applications of 3D technologies to culture”, thematic unit “Images of the digital future: emerging information technologies”, workshop “Digital Innovation for the Knowledge Society”, Eugenides Foundation, May 28, 2008, Athens, Greece.
- [INV6] Speech on the “Clepsydra Cultural Heritage Digitization Centre - Preserving the past, Investing in the future”, Workshop on Digital recording of cultural heritage, 2007, Xanthi, Greece.
- [INV7] Speech on the “Three dimensional digitization”, Greek Army - Fourth Corps, 2007, Xanthi, Greece.
- [INV8] Speech on the “Exploitation of the Internet for online services”, under the project “Information and support for the involvement of repatriated Greeks of the Municipality of Xanthi in the Digital Age”, 2005, Xanthi, Greece.

3.3 Contribution to the scientific community

3.3.1 Organization of international scientific summer schools

- [OC-SS1] “Digital Technologies In Cultural Heritage & Tourism”, 2015
(<http://digarch.syros.aegean.gr/2015/>)

3.3.2 Organization of international scientific conferences

- [OC-C1] Virtual Archaeology: Museums and Cultural Tourism, 2013, 2015
(<http://vamct.syros.aegean.gr/2013/>, <http://vamct.syros.aegean.gr/2015/>).
- [OC-C2] International Conference on Simulation and Modelling Methodologies, Technologies and Applications: SIMULTECH 2011-2014
(<http://www.simultech.org/ProgramCommittee.aspx>)

3.3.3 Organization of workshops and round-tables

- [OC-W1] Workshop «Culture-Technology-Education», 15 May 2015, 16:00-18:00, Room D (Pav. 8, Helexpo), in theThessaloniki Science Festival, Thessaloniki, Greece
(<http://www.thessalonikisciencefestival.gr/en/festival-2015-en/sections-festival-2015-en/workshops-2015/>)
- [OC-W2] App development workshop Xanthi 2015, two-days hands-on workshop on smart mobile devices application development, Democritus University of Thrace Amphitheater, 16-17 May 2015, Xanthi, Greece
(<https://www.facebook.com/appDevXanthi2015>)
- [OC-W3] Roundtable on “Applications of 3D technologies to culture”, thematic unit “Images of the digital future: emerging information technologies”, at the workshop “Digital Innovation for the Knowledge Society”, Eugenides Foundation, May 28, 2008, Athens, Greece.

3.3.4 Editorial boards in international scientific journals

- [EB-J1] International Journal of Computational Methods in Heritage Science (2015, under development), **Editor in chief**
- [EB-J2] Scientific Culture - Journal of Applied Science and Technology to Cultural Issues
(<http://www.sci-cult.com/files/index.php/ct-menu-item-9>), **Associate Editor**
- [EB-J3] Science Journal of Circuits, Systems and Signal Processing
(<http://www.sciencepublishinggroup.com/journal/editorialboard.aspx?journalid=136>)
- [EB-J4] Journal of Advanced Computer Science & Technology
(<http://www.sciencepubco.com/index.php/JACST/about/editorialTeam>)
- [EB-J5] International Scientific Journal on Mediterranean Archaeology and Archaeometry
(<http://www.maajournal.com/editorialboard.html>)
- [EB-J6] Computer Science and Engineering of Scientific and Academic Publishing
(<http://www.sapub.org/journal/editorialboard.aspx?journalid=1081>)

3.3.5 Technical committees, international scientific journals and conferences

- [TC1] International Symposium on Web of Things and Big Data: WoTBD 2015
- [TC2] International Conference of Signal Processing and Data Mining: ICSPDM 2015
- [TC3] International Colloquium of Art and Design Education Research (i-CADER 2015)
- [TC4] Design and Performance of Networks on Chip: DPNoC 2015
- [TC5] Mobile Applications: MobiApps 2015

- [TC6] International Workshop on Mobile Applications (MobiApps 2015, 2014)
- [TC7] International Workshop on the Design and Performance of Networks on Chip (DPNoC 2014)
- [TC8] International Journal of Computing and Digital Systems

3.3.6 Reviewer in international scientific journals

- [RV-J1] International Journal of Applied Systemic Studies (2014)
- [RV-J2] Archives and Manuscripts (2013)
- [RV-J3] IEEE Transaction on Image Processing (2006, 2013, 2014)
- [RV-J4] Elsevier Pattern Recognition Letters (2013)
- [RV-J5] IEEE Transactions on Multimedia (2005, 2006, 2007)
- [RV-J6] Elsevier Journal of Signal Processing (2008, 2011)
- [RV-J7] Elsevier Journal of Cultural Heritage (2008)
- [RV-J8] EURASIP Journal on Advances in Signal Processing (2008)
- [RV-J9] Recent Patents on Signal Processing (2011)
- [RV-J10] Journal of Electrical and Computer Engineering (2012)

3.3.7 Reviewer in international scientific conferences

- [RV-C1] International Symposium of Science and Mathematics: ISySM 2015
- [RV-C2] Progress in Applied Mathematics in Science and Engineering: PIAMSE 2015
- [RV-C3] Game Physics and Mechanics International Conference: GAMEPEC 2015
- [RV-C4] Fifth International e-Learning Conference: leLC 2015
- [RV-C5] IEEE Symposium on Business, Engineering and Industrial Applications: ISBEIA 2014, 2013, 2012
- [RV-C6] IEEE International Conference on Control System, Computing and Engineering, ICCSCE 2014, 2013
- [RV-C7] IEEE Colloquium on Humanities, Science and Engineering Research: CHUSER 2014
- [RV-C8] International Postgraduate Colloquium on Science and Technology, IPCOST 2014
- [RV-C9] IEEE Symposium on Humanities, Science and Engineering: SHUSER 2013, 2012
- [RV-C10] IEEE Business, Engineering & Industrial Applications Colloquium: BEIAC 2013
- [RV-C11] IEEE Symposium on Industrial Electronics & Applications: ISIEA 2013, 2012
- [RV-C12] Colloquium on Administrative Science & Technology: CoAST 2013
- [RV-C13] International Colloquium of Art and Design Education Research: i-CADER 2015
- [RV-C14] Annual international conference on Computer Applications and Quantitative Methods in Archaeology: CAA 2011
- [RV-C15] International Multi-Conference on Engineering and Technological Innovation: IMETI 2011, 2009
- [RV-C16] International Conference on Engineering and Meta-Engineering: ICEME 2011
- [RV-C17] International Conference on Digital Signal Processing: DSP 2011
- [RV-C18] International Conference on Imaging Systems and Techniques: IST 2010
- [RV-C19] ACM International Conference on Digital Interactive Media in Entertainment and Arts: DIMEA 2008

[RV-C20] IEEE Africon 2007

3.3.8 Committees for research policy and management

- [C-MP1] Member of the Scientific Advisory Board of the Institute for Language and Speech Processing / Athena Research Centre (2012-today).
- [C-MP2] Head of the Multimedia Research Group at the Institute for Language and Speech Processing / Athena Research Center - <http://multimedia.ipet.gr> (2012-today).
- [C-MP3] Head of research at ““Clepsydra”-Cultural Heritage Digitization Centre’, Institute for Language and Speech Processing / Athena Research Center - <http://clepsydra.ipet.gr> (2012-today).
- [C-MP4] Head of the Department of Multimedia, Cultural and Educational Technology Institute / Athena Research Centre (2009-2012).
- [C-MP5] Head of research at “Clepsydra”-Cultural Heritage Digitization Centre, Cultural and Educational Technology Institute / Athena Research Centre (2008-2012).
- [C-MP6] Evaluator of high tech proposal and projects for the General Secretariat of Research and Technology under the 3rd Framework Programme, Measure 3.3., Programme “Processing of images, sounds and language”
- [C-MP7] Evaluator of high tech proposal and projects for the General Secretariat of Research and Technology under the 3rd Framework Programme, for the Regional Operational Programmes of Attica, Crete, Northern Aegean, Western Greece and the Ionian Islands
- [C-MP8] Evaluator of high tech proposal and projects for the General Secretariat of Research and Technology under the 3rd Framework Programme, Measure 8.3 - Action 8.3.6., Human Networks of Research and Technological Training
- [C-MP9] Evaluator of high tech proposal and projects for the General Secretariat of Research and Technology under the 3rd Framework Programme, for PENED programme
- [C-MP10] Evaluator of high tech proposal and projects for the General Secretariat of Research and Technology under the 3rd Framework Programme, for Investment Projects

3.3.9 Participation in scientific and technological exhibitions

- [EX-1] Thessaloniki Science Festival (<http://www.thessalonikisciencefestival.gr/>) for Athena Research Center, WE Sports and Culture Facility, TIF-Helexpo, Pavilion 8, 14-17 May 2015, Thessaloniki, Greece.
- [EX-2] Athens Science Festival (<http://www.athens-science-festival.gr/>) for Athena Research Center, Technopolis, Gazi, , Athens, Greece, 17-22 March2015
- [EX-3] 5th Industrial Informatics Festival 2014 (<http://www.i2fest.gr/>), in collaboration with the Laboratory of Special Engineering of the Department of Electriccal and Computer Engineering of DUTH, Nea Karvali, Kavala, Greece, Oct. 12-18, 2012.
- [EX-4] “Researcher’s Night” 2014 (<http://www.rengreece.gr/event/ekefe-demokritos/>) for Athena Research Center, NCSR Democritus, Athens, Greece, 26 Sep. 2014.
- [EX-5] 3rd Industrial Informatics Festival 2012 (<http://www.i2fest.gr/>), in collaboration with the Laboratory of Special Engineering of the Department of Electriccal and Computer Engineering of DUTH, Nea Karvali, Kavala, Greece, Oct. 17-21, 2012.
- [EX-6] 19th PanHellenic exhibition “Thrace”, International Exhibition Centre, Komotini, Greece, 2010.
- [EX-7] “Days of Research and Technology”, Zappeion, Athens, Greece, 2006, 2007.

- [EX-8] Workshop “Digital Innovation and the Society of Knowledge”, Eugenides Foundation, Athens, Greece, 2008.
- [EX-9] HELEXPO International Exhibition of Thessaloniki, 2006-2008.

4 Teaching

4.1 Independent teaching

4.1.1 Postgraduate courses

- [PCRS1] 3D DIGITIZATION OF CULTURAL HERITAGE - A2 (2015-today), University of the Aegean, MSc in “Applied Archaeological Sciences
- [PCRS2] APPLICATIONS: VIRTUAL MUSEUMS, CYBERARCHAEOLOGY - B1 (2015-today), University of the Aegean, MSc in “Applied Archaeological Sciences
- [PCRS3] LASER SCANNER, TOPOGRAPHIC MAPPING, DIGITAL REPRESENTATION - B3-Delphi (2015-today), University of the Aegean, MSc in “Applied Archaeological Sciences
- [PCRS4] WEB APPLICATIONS DESIGN (2012-today), Dept. of Electrical Engineering, Technological Educational Institution of East Macedonia and Thrace, MSc in Innovation in Technology & Entrepreneurship
- [PCRS5] MOBILE COMMUNICATIONS (2012-2013), Dept. of Electrical Engineering, Technological Educational Institution of East Macedonia and Thrace, MSc in Innovation in Technology & Entrepreneurship

4.1.2 Undergraduate courses

- [CRS1] DIGITAL SIGNAL PROCESSING (2012-2013), Dept. of Informatics Engineering, Technological Educational Institution of Central Macedonia
- [CRS2] PATTERN RECOGNITION - NEURAL NETWORKS (2011-2013), Dept. of Informatics Engineering, Technological Educational Institution of Central Macedonia
- [CRS3] MULTIMEDIA (2006-2009), Dept. of Electrical and Computer Engineering, Democritus University of Thrace
- [CRS4] CAD II (2007-2008), Dept. of Architectural Engineering, Democritus University of Thrace
- [CRS5] PROGRAMMING WITH MATLAB (2004-2005), Dept. of Electrical and Computer Engineering, Democritus University of Thrace

4.2 Laboratory organization and Teaching assistantship

- [CRS6] DIGITAL SIGNAL PROCESSING (2012-2013), Dept. of Informatics Engineering, Technological Educational Institution of Central Macedonia
- [LAB1] DIGITAL SIGNAL PROCESSING (2000-2004), Dept. of Electrical and Computer Engineering, Democritus University of Thrace
- [LAB2] ELECTRICAL CIRCUITS III (2002-2004), Dept. of Electrical and Computer Engineering, Democritus University of Thrace

4.3 Supervision of PhD theses

- [PHD1] Pantelis Volonakis, “Informatics-Virtual reality technologies in archaeological and archaeometric education”, member of the supervising committee, Dept. of Mediterranean Studies, University of the Aegean, 2014.

4.4 Supervision of postgraduate theses

- [MSC1] Apostolos Pavlidis, “Multimodal human-computer interaction using ambient intelligence techniques”, TEI of East Macedonia and Thrace, MSc in Innovation in Technology & Entrepreneurship, assigned Oct. 2014
- [MSC2] Nikolaos Ikoniadis, “VR-like presentation environment for a web CMS”, TEI of East Macedonia and Thrace, MSc in Innovation in Technology & Entrepreneurship, assigned Oct. 2014
- [MSC3] Ioannis Dimou, “Fully operational commercial website using contemporary web design techniques and smart mobile device compliance”, TEI of East Macedonia and Thrace, MSc in Innovation in Technology & Entrepreneurship, completed Mar. 2014 (<http://goo.gl/MchpGj>).
- [MSC4] Argirios Thagopoulos, “Professional-grade commercial website with advanced user interaction capabilities and personalisation, based on modern web design approaches and smart mobile device compliance”, TEI of East Macedonia and Thrace, MSc in Innovation in Technology & Entrepreneurship, completed Mar. 2014 (<http://goo.gl/veeX6z>).
- [MSC5] Alexandros Manousos, “From mobile networks to the Internet of Things - a thorough review”, TEI of East Macedonia and Thrace, MSc in Innovation in Technology & Entrepreneurship, completed Mar. 2014 (<http://goo.gl/Oz0YYw>).

4.5 Supervision of graduate theses

- [THS1] Maria Pappou & Christos Zaptseas, “Cooperative action of smart mobile devices and small scale measurement and robotic systems”, Dept. of Informatics Engineering, Technological Educational Institution of Central Macedonia, completed Nov. 2014 (<http://goo.gl/HgPeq0>), experimental application available at the Google Play Store: <https://play.google.com/store/apps/details?id=org.teiser.arduino>
- [THS2] Vasilios Tsorbatzoudis, “Integrated system for the connection of QR code signage with web databases/portals through SQL calls on Android smart mobile devices”, Dept. of Informatics Engineering, Technological Educational Institution of Central Macedonia, completed Apr. 2014 (<http://goo.gl/l8U5pM>), app available at the Google Play Store: <https://play.google.com/store/apps/details?id=com.bill.qrxanthiold>
- [THS3] Dimitrios Farganis, “Web programming and social media integration - management of exhibitions and contests on artworks”, Dept. of Informatics Engineering, Technological Educational Institution of Central Macedonia, completed Nov. 2013 (<http://goo.gl/am9A5U>), online system available at: <http://www.votetheart.com>
- [THS4] Stephanie Papariga, “Motion detection for surveillance using a web camera and OpenCV”, Dept. of Informatics Engineering, Technological Educational Institution of Central Macedonia, completed Nov. 2013 (<http://goo.gl/94YzRk>)
- [THS5] Vasileios Sevetlidis, “Analysis of colour images for content-based retrieval applications”, Dept. of Informatics Engineering, Technological Educational Institution of Central Macedonia, completed Oct. 2013 (<http://goo.gl/1kNi6m>)

- [THS6] Theodoros Xanthopoulos, “Real-time image processing for person detection/identification with smart mobile devices”, Dept. of Informatics Engineering, Technological Educational Institution of Central Macedonia, completed Sept 2013 (<http://goo.gl/ZWpjCn>), app available at Google Play Store: <https://play.google.com/store/apps/details?id=com.teox.vision>
- [THS7] Anastasia Koustouda, “Design and implementation of a commercial portal for the city of Serres on Android OS smartphones”, Dept. of Informatics Engineering, Technological Educational Institution of Central Macedonia, completed May 2013 (<http://goo.gl/nn2LBD>), app available at Google Play Store: <https://play.google.com/store/apps/details?id=com.anaskous.serresGuide>
- [THS8] Konstantinos Vlachos, “Face recognition system in a controlled space with a web camera and OpenCV”, Dept. of Informatics Engineering, Technological Educational Institution of Central Macedonia, completed Feb 2013 (<http://goo.gl/lrUvUT>)
- [THS9] Christos Feizidis, “Microprocessor-based system for the barcode identification in access control applications”, Dept. of Informatics Engineering, Technological Educational Institution of Central Macedonia, assigned Dec 05, 2012
- [THS10] George Siougles & Konstantinos Petsinas, “Location sharing and coordination based on smart mobile devices”, Dept. of Informatics Engineering, Technological Educational Institution of Central Macedonia, assigned Nov. 27, 2012
- [THS11] Miltiades Sainatoudis, “QR Codes identification system for webpage connectivity in Android devices”, Dept. of Informatics Engineering, Technological Educational Institution of Central Macedonia, assigned May 25, 2012

4.6 Academic memberships

4.6.1 Postgraduate committees

- [SC-MSc1] Konstantinos Papakipis, “Mechatronic open space surveillance system using wireless sensor network”, 2014, Department of Electrical and Computer Engineering, Democritus University of Thrace
- [SC-MSc2] George Kiriakou, “Analysis of building energy management systems (BEMS), evaluation of the building complex of the Dept. of Electrical & Computer Engineering of DUTH and ranking the attractiveness of E/M techno-economic interventions by considering the operational costs of upgrades”, 2012, Department of Electrical and Computer Engineering, Democritus University of Thrace
- [SC-MSc3] Sotiris Koumaridis, “Design and development of a measurements laboratory - Application to the measurement of thermal performance of solar collectors”, 2012, Department of Electrical and Computer Engineering, Democritus University of Thrace
- [SC-MSc4] Simeon Parcharidis, “Development of a model for the simulation and optimized design of an autonomous hybrid power supply system”, 2012, Department of Electrical and Computer Engineering, Democritus University of Thrace
- [SC-MSc5] Eleftheria Mitka, “Standards requirements for safe operation of domestic robots”, 2011, Department of Electrical and Computer Engineering, Democritus University of Thrace
- [SC-MSc6] Ioannis Konstantinidis, “Design and implementation of techniques for the conversion of binary classification to multi-dimensional and applications to supervised learning algorithms”, 2011, Department of Electrical and Computer Engineering, Democritus University of Thrace

- [SC-MSc7] George-Tsampikos Michailidis, “New hardware architectures for robotic vision”, 2011, Department of Electrical and Computer Engineering, Democritus University of Thrace
- [SC-MSc8] Alexander Iosifidis, “Surveillance of moving target using a mechatronic system with active camera”, 2010, Department of Electrical and Computer Engineering, Democritus University of Thrace.
- [SC-MSc9] Ioannis Chatzisavvas, “Diagnostic Measurement and Oscillations Analysis System: Application to the generator bearings and turbine shaft”, 2010, Department of Electrical and Computer Engineering, Democritus University of Thrace.
- [SC-MSc10] Christos-Athanasios Samaras, “Mechatronic system of robot guidance and target tracking over a wireless camera: a Case Study”, 2010, Department of Electrical and Computer Engineering, Democritus University of Thrace.
- [SC-MSc11] Vasilios Kinatsidis, “Reconstruction of 3D objects from their parts”, 2010, Department of Electrical and Computer Engineering, Democritus University of Thrace.

4.6.2 PhD committees

- [SC-PhD1] Dimitrios Chrysostomou, “System of multiple cameras for robotic navigation systems and surveillance”, 2012, Department of Electrical and Computer Engineering, Democritus University of Thrace
- [SC-PhD2] Aikaterini Balla, “Macedonian tombs: geographical approach with modern methods”, 2012, Department of Cultural Technology and Communication, University of the Aegean
- [SC-PhD3] Savvas Chatzichristofis, “Description and retrieval of the visual content of multimedia information based on intelligent techniques”, 2010, Department of Electrical and Computer Engineering, Democritus University of Thrace
- [SC-PhD4] Christos Georgoulas, “Design and implementation of stereo vision electronic system”, 2010, Department of Electrical and Computer Engineering, Democritus University of Thrace
- [SC-PhD5] Anestis Koutsoudis, “Content-based retrieval of 3D data using the MPEG-7 schema”, 2010, Department of Electrical and Computer Engineering, Democritus University of Thrace

4.7 Supervision of internships

4.7.1 Athena - Research and Innovation Centre in Information, Communication and Knowledge Technologies

- 2015 One student (Democritus University of Thrace, Greece), scope:
- Multimedia engineering: Brainwaves and automation
- 2014 Two students (Democritus University of Thrace, Greece), scope:
- Multimedia engineering: Development of a complex web portal for a digital excavation
- 2008 One student (Democritus University of Thrace, Greece), scope:
- Digital processing of audio signals and production of a sounds library
- 2006 One student (Democritus University of Thrace, Greece), scope:
- Multimedia databases, MPEG7, XML, GIS, Java, Image Processing

- 2005 One student (Ecole Polytechnique de l'université de Nantes, France), scope:
- Web-based 3D virtual museums based on Java technology
- 2004 One student (Ecole Polytechnique de l'université de Nantes, France), scope:
- Design and implementation of a client-server scheme for progressive transmission of JPEG2000 encoded images over the internet with advanced capabilities
- Two students (Democritus University of Thrace, Greece), scope:
- 3D graphics design, 3D multimedia programming, multimedia databases internet integration
 - Dynamic and internet-based virtual museum
- 2003 Two students (Democritus University of Thrace, Greece), scope:
- Data compression and measuring systems (application to a weather station)
 - Navigation in virtual spaces with Macromedia Director

4.8 Seminar Courses

- [T-S1] Seminar “Diagnosis Techniques in the Art Conservation Science”, organized by the Cross disciplinary Postgraduate Programme of Aristotle University of Thessaloniki, 17-19 Feb. 2012, Thessaloniki.
- [T-S2] Lectures on “Digital Photography and Image Processing”, Foundation of Thracian Art and Tradition, Xanthi, Greece, 2008-today.
- [T-S3] Fast track seminar on “Digital Photography and Image Processing”, organized by the IEEE Student Branch, Democritus University of Thrace, Xanthi, Greece, 2011.
- [T-S4] Seminar “Advanced subjects of digitization, processing and analysis of 3D data and applications”, under the project “Strengthening of studies in informatics”, Technological Educational Institution of Central Macedonia (Serres), 6-8 June 2007, Serres, Greece.
- [T-S5] Seminar “Digital Recording of Cultural Heritage”, under the project INTERREG III A / PHARE CBC - “Cooperation network for knowledge dissemination on 3D digitization applications”, 7 - 11 May 2007, Xanthi, Greece.
- [T-S6] Speech on the “CLEPSYDRA - Center for the digitization of cultural heritage”, under the project INTERREG III A / PHARE CBC - “Cooperation network for knowledge dissemination on 3D digitization applications”, 4 May 2007, Xanthi, Greece.
- [T-S7] Seminar presentation in “MULTI-MINE: Human Network of research and technological training in technologies of retrieval and management of knowledge from Multimedia”, 5th seminar period, 24 January - 2 February 2005, Xanthi, Greece.
- [T-S8] Seminar “Training of educators in the exploitation of Technologies of Information & Communication (ICT) in the Education”, Courses in work packages 41-001-03 and 41-001-04, Mar.-May 2002 and Sep.-Oct. 2002, Xanthi, Greece.
- [T-S9] 20-hour courses in work package 8 - usage of CAD software, COREL, etc., under the “Programme of further education of the administrative personnel of Democritus University of Thrace”, 9-25 Sept. 2001, Xanthi, Greece.
- [T-S10] Courses on “Computer-based laboratory experiments on electricity”, under the Programme of Education of Educators, 16-27 Feb. 1998, Xanthi, Greece.

- [T-S11] Seminar “Introduction to DOS, Windows 3.x, WordPerfect v6 for Windows, for the employees of the SEKAP tobacco industry”, Xanthi, Greece.
- [T-S12] Seminar on “Design with computers”, 1994, Xanthi, Greece.
- [T-S13] Seminar on “Educational applications of technology”, 1994, Xanthi, Greece.
- [T-S14] Seminar on “Basic principles of computer and multimedia systems”, 1993, Xanthi, Greece.
- [T-S15] Seminar on “Multiple communication media”, 1993, Xanthi, Greece.
- [T-S16] Seminars on “Usage of computers in the computerization of services of local authorities”, 1992, Orestiada-Didymoteicho-Soufli-Feres-Sapes, Greece.

5 Administrative activities

5.1 Associations and organizations

- [M-C1] Deputy Secretary General of the Board of the ‘Athena’ Researchers’ Association (2012-2015).
- [M-C2] Secretary General of the Steering Committee of the ‘Athena’ Researchers’ Association (2011-2012).
- [M-C3] Founding member of the Researchers’ Association of the ‘Athena’ Research Center (2011).
- [M-C4] Member of the Institute for Systems and Technologies of Information, Control and Communication (since 2011).
- [M-C5] Member of the Association of Greek Researchers (since 2009).
- [M-C6] Senior Member of the IEEE (since 2015, member during 2001-2015).
- [M-C7] Member of the Technical Chamber of Greece (since 1995)

5.2 Committees

- [M-MC1] Head of the Tender Committee for the “Building security services for the Athena Research Center facilities in Xanthi”, ILSP.PD18.XAKD.145.0215, 2015
- [M-MC2] Head of the Annual Tenders Committee of Athena Research Center for 2014
- [M-MC3] Head of the Tender Committee of the project “Supply and installation of general and specialized building equipment for the Athena Research Center”, Jun. 2013
- [M-MC4] Member of the committee for supplies under the project “Cooperation network for the knowledge transfer in 3D scanning” - Cross border Programme INTERREG IIIA / PHARE CBC GREECE - BULGARIA.
- [M-MC5] Member of the committee for the award of project “Supply and installation of basic infrastructure for the Center for the Digitization of Cultural Heritage - Clepsydra”, Athena Research Center
- [M-MC6] 2007-2010 Annual Committee Member for the evaluation and of tenders for Athena Research Center
- [M-MC7] Member of the Annual Candidate Evaluation Committee of Athena Research Center for 2014, 2012, 2011
- [M-MC8] Member of the Annual Committee of Scholarships of Athena Research Center for 2014

- [M-MC9] Member of the Procurements Committee for the Project “Design and Construction of new building for CETI/Athena” - Tender 3/08
- [M-MC10] Member of the Procurements Committee for the Project “Design and Construction of new building for CETI/Athena” - Tender 2/08
- [M-MC11] Member of the Procurements Committee for the Project “Design and Construction of new building for CETI/Athena” - Tender 1/08
- [M-MC12] Member of the Annual Asset Destruction Committee of Athena Research Center for 2008
- [M-MC13] Representative of the Cultural and Educational Technology Institute / Athena Research Center for the committee of the project “Construction of the building to house CETI”.

6 Research and Development Projects

6.1 European projects

6.1.1 Member of the scientific team

- [EU-C1] “Colour and Space in Cultural Heritage (COSCH)”, COST Action TD1201, 2014-2018.
- [EU-C2] “The European Network on Integrating Vision and Language (iV&L Net): Combining Computer Vision and Language Processing For Advanced Search, Retrieval, Annotation and Description of Visual Data”, COST Action IC1307, 2014-2018
- [EU-C3] “3D-ICONS - 3D Digitisation of Icons of European Architectural and Archaeological Heritage”, FP7, ICT PSP Objective identifier: 2.2 Digitising content for Europeana, 2012-2014.
- [EU-C4] “CORECT: Common Religious Cultural Pathways”, Territorial co-operation Collaborative Research Project, 2011-2013.
- [EU-C5] “ATRIUM: Architecture of Totalitarian Regimes of the XX Century in Urban Management”, Funded by the South East Europe Programme, 2011-2013.
- [EU-C6] “CARARE - Connecting Archaeology and Architecture in Europeana”, CIP-Best Practice Network (CIP-ICT-PSP.2009.2.2), 2009-2011.
- [EU-C7] “STACHEM - Science and Technology for Archaeology and Cultural Heritage in the Eastern Mediterranean”, FP7 - Capacities Specific Programme - Research Infrastructures, 2008-2009.
- [EU-C8] “Tele-Education Software For Interactive Video Lecturing (MULTIMEDIA-TESVIL)”, EUREKA Programme, 2001-2003.

6.2 Greek projects

6.2.1 Coordination and technical supervision

- [GR-S1] “GameIt - Platform for semantic knowledge management and creation of interactive educational scenarios using advanced technologies of multiplayer game development”, 2014-2015, deputy scientific coordinator for the Athena Research Centre, General Secretariat for Research and Technology, PAVET 2013 programme (<http://gameit.ipet.gr>)

- [GR-S2] “Synthesis Of Ideas, Forms And Tools For Cultural And Artistic Education (Synthesis)”, 2014-2015, deputy scientific coordinator for the Athena Research Centre, Call 164, Priority Axis 2, ‘Education and Lifelong Learning’ Programme, Ministry of Education and Religious Affairs (<http://synthesis.ipet.gr>)
- [GR-S3] “Easy3D Exhibitions”, 2013-2015, subcontract within the project “Integrated platform for the development and management of 3D applications of cultural heritage (3DCMS)” (<http://3dcms.ipet.gr>)
- [GR-S4] “Virtual walkthrough in the city of Serres”, 2010, TEI of Central Macedonia (Serres).
- [GR-S5] “Corgialenio”, 2008, Institute for Language and Speech Processing/Athena Research Centre.
- [GR-S6] “Development of interactive multimedia applications for the Archaeological Museum of Arta and installation of infokiosks”, 2008, Prefectural Self-Government of Arta, subproject technical supervision.
- [GR-S7] “Digitization and documentation of the cultural archive of HELEXPO”, 2008, HELEXPO.
- [GR-S8] “Petrimus3D: Virtual representation of the Natural History Museum of the Lesvos Petrified Forest”, 2008, ANCO S.A., subproject coordination.
- [GR-S9] “Digitech-III-2: Update of study Digitech-III and Internet application for knowledge dissemination and education in 3D digitization technologies”, 2008, Operational Programme “Information Society” - Call No.172 (<http://www.ipet.gr/digitech2/>)
- [GR-S10] “Content Digitization”, Sub-project 3 of project “Presentation of Cultural and Historical Heritage of Evros”, Operational Programme “Information Society”, 3rd Framework, 2007-2008, Prefectural Self-government of Rhodopi-Evros.
- [GR-S11] “Archival and retrieval of multimedia data, based on the content and MPEG-7 metadata”, (Part of project PENED, Code. 03ED679), 2006-2008, General Secretariat of Research and Development, subproject coordination.
- [GR-S12] “Research activities support at CETI”, 2005-2008, Excellence in Research Institutes of GSRT, subproject coordination.
- [GR-S13] “DIGITECH-III: Study of 3D digitization technologies”, Operational Programme “Information Society” - Call No.65, 2004-2005, technical supervision. (<http://www.ipet.gr/digitech/>)
- [GR-S14] “Polymnia - New music tools and music portal”, 2003-2005, Co-funded by the General Secretariat of Research and Development and the European Union, technical supervision.
- [GR-S15] “Eureka: ECH:TOPICC/Endangered Cultural Heritage: Tools For Preservation, Investigation And Copyrights Clearance”, EUREKA, Sub-Umbrella EUROCARE, 2002-2005, technical supervision.

6.2.2 Member of the scientific team in the following projects:

- [GR-C1] “3DOR - 3D Object Retrieval”, Thales Programme, Democritus University of Thrace, 2012-2014 (<http://excellence.minedu.gov.gr/thales/en/thalesprojects/379516>).
- [GR-C2] “Information and support for the involvement of repatriated Greeks of the Municipality of Xanthi in the Digital Age”, Local Authorities Union of Xanthi District, 2005-2006, Seminar courses and storyboards for the development of interactive multimedia CDROM title.
- [GR-C3] “Study and Creation of Prototype Museum Toolkits”, Thrace-Aegean-Cyprus 2004-2005 Programme, 2005-2006, Scenario, storyboards, production and processing of multimedia content for the development of multimedia CDROM title.

- [GR-C4] “MULTI-MINE: Network of research and technological training in technologies of retrieval and management of knowledge from Multimedia”, General Secretariat of Research and Development / European Union, 2005, Seminar courses.
- [GR-C5] Nautilus”, Thrace-Aegean-Cyprus 2004-2005 Programme, 2004-2006, Processing of multimedia content and web site (<http://naytilos.ipet.gr/title.html>)
- [GR-C6] “Byzantine Mani: Digitization of Ecclesiastical Monuments of Mani”, Ministry of Culture, 2004-2005, 3D digitization of monuments (<http://www.ipet.gr/3d%5Fdemo/mani/>).
- [GR-C7] “E-LEARNING LAND - An Integrated Virtual Environment for Supporting On-Line Learning Communities (exploiting interoperable repositories of educational resources)”, Co-funded by the General Secretariat for Research and Technology and the European Union, 2004-2005, Development of web portal.
- [GR-C8] “Enhancement of studies on informatics in the Democritus University of Thrace”, Ministry of Education, 2004, Development and adaptation of printed and electronic material.
- [GR-C9] “Rhodian Amphorae”, Archaeological Institute of Aegean Studies, 2004, Development of database for Rhodian Amphorae.
- [GR-C10] “ E-QUALity - Supporting the customization of Mass Media and employees in the area of Northeast Greece: Telework - Teleconference”, National Documentation Centre, 2003-2005, Scenario, storyboards, production and processing of multimedia content and development of interactive multimedia CDROM title.
- [GR-C11] “E-QUALity - Supporting the customization of Mass Media and employees in the area of Northeast Greece: Reconciliation of Family and Work”, Ministry of Employment / National Documentation Centre, 2003-2005, Scenario, storyboards, production and processing of multimedia content and development of interactive multimedia CDROM title.
- [GR-C12] “Thrace in the Hellenic Parliament”, The Hellenic Parliament, 2003, Scenario and storyboards for the development of an interactive multimedia CDROM title (<http://www.ipet.gr/vouli/>).
- [GR-C13] “Maganeaia 2003 - Presentation of non-widespread Olympic Sports”, CETI/Athena RC, 2003, Scenario, storyboards, production and processing of multimedia processing and development of interactive multimedia CDROM title.
- [GR-C14] “Karabournaki: Recording the past”, CETI/Athena RC, 2002-2004, 2D and 3D digitization, reconstruction and representation, tools for archival, dynamic internet-based database with GIS capabilities (<http://karabournaki.ipet.gr>)
- [GR-C15] “Improvement of the infrastructure of the electrical circuits analysis laboratory”, Engineers and Public Constructors Pension Fund of Greece, 2002-2003, Improvement of the infrastructure.
- [GR-C16] “Training of educators in the exploitation of Technologies of Information & Communication (ICT) in the Education”, Operational Programme Information Society, 2002, Courses in work packages 41-001-03 and 41-001-04.
- [GR-C17] “Traditional Wood Craftsmen and Trade in the Aegean, Thrace and Cyprus”, THRACE-AEGEAN-CYPRUS 2001-2002 Programme, 2001-2003, Multimedia content production (<http://www.ipet.gr/artwood/>)
- [GR-C18] “METAICON. Transmission of images through the web, Phase B”, SYN 98, 2001, Image transmission research.
- [GR-C19] “Study of satellite broadband networks LEO/MEO for cellular multimedia telecommunication systems”, General Secretariat of Research and Development

(PENED '99, Code: 99ED443), 2000-2001, National Observatory of Athens, Development of coding techniques for colour multimedia data.

- [GR-C20] “Improvement of the infrastructure of the electrical circuits analysis laboratory”, Engineers and Public Constructors Pension Fund of Greece, 2000-2001, Development of software for digital image processing.
- [GR-C21] “PROMETHEUS”, Ministry of Education, 1999, Democritus University of Thrace, Development and upgrade of the web site of central library of DUTH.
- [GR-C22] “SIRENS Phase B: COSMOS”, Ministry of Education, 1998, Livanis Publications, Scenario, storyboards, production and processing of multimedia content and implementation of dynamic interactive multimedia title on CDROM.
- [GR-C23] “SIRENS Phase B: The Gymnasium Physics Lab as a technological centre of global communication and learning”, Ministry of Education, 1998, Scenario, storyboards, production and processing of multimedia content and programming of dynamic interactive multimedia title on CDROM.
- [GR-C24] “Development of system for cultural documentation system and dissemination of monuments and works of art”, General Secretariat of Research and Development (PENED '95) - National Gallery of Greece, 1997-1998, Scenario, storyboards, production and processing of multimedia content and development of dynamic interactive multimedia title on CDROM.
- [GR-C25] “Reformation of the curriculum of the Department of Physical Education and Sport Science of DUTH”, Ministry of Education / Department of Physical Education and Sport Science of DUTH, 1997-1998, Scenario, storyboards, production and processing of multimedia content and development of three interactive multimedia CDROM titles.
- [GR-C26] “The Gymnasium Physics Lab as a technological centre of global communication and learning”, Ministry of Education, 1997, Software analysis.
- [GR-C27] “ARTEMIS: Integrated system for monitoring and optimizing production processes in paper-industry”, General Secretariat of Research and Development, 1997, Data collection, development of database and software.
- [GR-C28] “Thracian Electronic Thesaurus, History and Culture, Nature, Tourism”, General Secretariat of Research and Development, 1996-1998, Scenario, storyboards for interactive multimedia CDROM title and dynamic internet application (<http://thesaurus.duth.gr/hellenic.html>, <http://goo.gl/tlEHle>).
- [GR-C29] “Development of infrastructure for the digital imaging and multimedia laboratory”, Engineers and Public Constructors Pension Fund of Greece, 1996, Web server.
- [GR-C30] “New methods in the efficiency of teaching methods”, OPAP S.A. and Department of Physical Education and Sport Science of DUTH, 1994-1995, Scenario, storyboards, production and processing of multimedia content and development of interactive multimedia CDROM title.
- [GR-C31] “Remotely operated vehicle for underwater tasks”, Democritus University of Thrace, 1993, Development of control software to drive sensors of underwater vehicle.

6.3 Private projects and services

- [PR-S1] “Specifications for necessary hardware and software for the operation of border post (Koulia) Kompotiou as Municipal History Centre”, 2012, Tender Contract, Municipality Nicholas Skoufa
- [PR-S2] 2D and 3D digitization of monuments and objects for the Diocese of Zihni, Greece, 2012, Tender Contract, Echmi SA.

- [PR-S3] 2D and 3D digitization of monuments and objects for the Diocese of Alexandroupolis, Greece, 2012, Tender Contract, Prisma Electronics SA.
- [PR-S4] Technical consultation of the Municipal Development Services of the Municipality of Xanthi, Greece for the development of the project “Child museum and historical archive”, 2010.
- [PR-S5] Technical consultation of the Municipality of Xanthi, Greece for the evaluation of tenders for the project “Geographical Information System for the Municipality of Xanthi”, 2008.
- [PR-S6] “Programme of further education of the administrative personnel of Democritus University of Thrace”, Democritus University of Thrace, 2001, Seminar courses (CorelDraw).
- [PR-S7] “Laboratory experiments in computers”, National Youth Foundation, 1998, Training of educators in the usage of the Internet.
- [PR-S8] “Computerization of services of the Department of Environmental Engineering of DUTH”, Democritus University of Thrace, 1997, Development and upgrade of applications for the administrative services.
- [PR-S9] “The Atlas of Greece”, Livanis Publications, 1996-1997, Scenario, storyboards, production and processing of multimedia content and development of interactive multimedia title on CDROM, ISBN: 960-7534-10-7, <http://goo.gl/N45391>.
- [PR-S10] “System to support cardio-vascular operations”, General Secretariat of Research and Development - Ergo Medical, 1996, Real-time graphics software development.
- [PR-S11] “Reorganization and computerization of administrative services of DUTH”, Democritus University of Thrace, 1991-1992, Development and upgrade of applications for the administrative services.

7 Innovation and technology transfer actions

7.1 Products

- [PROD1] “Thrace, Thracian Electronic Thesaurus”, 1998, Livanis Publications, ISBN: 960-7534-19-0, <http://goo.gl/tlEHle>.
- [PROD2] “The Atlas of Greece”, 1997, Livanis Publications, ISBN: 960-7534-10-7, <http://goo.gl/N45391>.

8 Analysis of research work

- [RA1] **3D digitization and reconstruction of cultural assets (objects, monuments, architecturals, urban areas, excavations/archaeological sites, open spaces)**
 Research and development in cultural digitization at each scale, geometric complexity and materials, with emphasis on 3D measurement of surface geometry and texture for accurate recording of reality, using both laser techniques (triangulation, time-of-flight) and terrestrial and aerial multi-image photogrammetry (shape from motion, shape from silhouette, shape from structured light).
Related projects: EU-C3, EU-C4, EU-C5, EU-C6, EU-C7, GR-S3, GR-S4, GR-S5, GR-S8, GR-S13, GR-S14, GR-C1, GR-C6, GR-C14, PR-S2, PR-S3,
 - Related publications, C26, C29, C30, C31, C33, C35, C36, C38

- [RA2] Innovative applications in the integrated management, study and dissemination of culture**
 Research and development of innovative applications for visualization, study and management of cultural heritage 3D reconstructions with emphasis on multi-layered visualization of multidimensional data in virtual environments. Includes research and development of interactive visual representations and environments for content-based retrieval and virtual navigation within complex 3D objects or sets. This section is supplemented with innovative culture-tourism applications.
- Related projects: EU-S1, EU-S3, GR-S2, GR-S3, GR-S4, GR-S5, GR-S8, GR-C6
 - Related publications: J1, J3, J10, J11, J19, J21, C9, C11, C32, C36
- [RA3] Innovative virtual museums with dynamic construction and content mechanisms**
 Research and development of virtual exhibitions and museums based on virtual reality techniques (3D virtual non-immersive environments) with dominant component the dynamic nature of both the content (the 3D exhibits) and their placement in the virtual space along with the topology of the virtual space.
- Related projects: GR-S2, GR-S3
 - Related publications: J10, C1, C13, C24
- [RA4] Research in 2D/3D image analysis and innovative content-based retrieval applications**
 Research in the field of multimedia content analysis to extract descriptors for shape, colour, etc., and development of innovative retrieval applications based on the content for static 2D images and 3D models. Includes research on analysis of multimedia databases and innovative visualization and management applications based on non-immersive virtual reality.
- Related projects: GR-S11
 - Related publications: J11, J12, J13, C9, C10, C16, C19, C22
- [RA5] Innovative applications in connecting culture and education (unification of metadata schemas and gamification), in education and educational technology**
 Research in the unification of metadata formats and techniques in educational technology and game-based learning to develop innovative applications in education by exploiting rich cultural content. It includes research and development on purely educational technology and the combination of interactive multimedia and the educational process.
- Related projects: EU-C8, GR-S1, GR-S2, GR-C3, GR-C5, GR-C6, GR-C7, GR-C10, GR-C11, GR-C12, GR-C13, GR-C21, GR-C22, GR-C23, GR-C24, GR-C25, GR-C26, GR-C31, PR-S9
 - Related publications: J1, C4, C28
- [RA6] Integrated digital excavation systems**
 Research and development on unifying the management of archaeological excavation data integrated with online services, geographic systems, 2D/3D digitization and reconstruction, stand-alone/offline digital recording techniques of archaeological journals, etc.
- Related projects: GR-C14
 - Related publications: C29, C30, C31, C33
- [RA7] Geographical systems in culture and predictive modelling applications**
 Research on archaeological data related to geographic information for developing multi-criteria predictive modelling techniques to identify sites of archaeological interest and avoid catastrophic interventions in modern residential development.

It includes the development of innovative applications of geographical information systems to cultural tourism.

- Related projects: -
- Related publications: J2, J4, J7, J8, C3, C6, C8, C21

[RA8] Innovative computer vision and image processing applications
Research and development on computer vision in quality control, in content-analysis, in segmentation and compression of 2D/3D images

- Related projects: GR-S11, GR-C1, GR-C18, GR-C19
- Related publications: J16, J17, J19, J20, C2, C20, C27, C34, C35, C37, C39

[RA9] Innovative industrial and ambient intelligence applications
Research and development on innovative systems of measurements of physical quantities and processes, organization and control of industrial production and on ambient intelligence.

- Related projects: GR-C27, GR-C30, GR-C32
- Related publications: J9, C2, C4, C5, C7, C40

9 Integrated research outcomes widely available

9.1 Software systems

9.1.1 Multimedia titles

- [MULT1]** Multilanguage cross-platform and web-enabled multimedia application for infokiosks within the project “CORECT: Common Religious Cultural Pathways”, 2013
demo@ <http://www.ipet.gr/~gpavid/infokiosk>
- [MULT2]** 3D reconstruction and virtual tour of the city of Argostoli before its complete destruction of 1953, 2008,
demo@ <http://www.ipet.gr/~gpavid/argostoli/>,
http://www.ipet.gr/3d_demo/argostoli/argostoli.wrl
- [MULT3]** Multimedia application for two infokiosks within the project “Creation of interactive multimedia applications in the Archaeological Museum of Arta and installation of infokiosks”, 2008 (Greek, English, Italian)
<http://www.ipet.gr/index2.php?lang=gr&mid=3&mod=projects>
- [MULT4]** Dynamic non-immersive virtual reality infokiosk application (virtual museum) under the scope of the project “Petrimus3D: Virtual representation of Natural History Museum of the Lesvos Petrified Forest”, 2008 (Greek, English, German).
- [MULT5]** Multimedia application (educational game) “Costumes of my region” under the project “Study and Creation of Prototype Museum Toolkits”, 2006 (Greek)
<http://www.ipet.gr/index2.php?lang=gr&mid=3&mod=projects>
- [MULT6]** Multimedia application (an educational game) “Nautilus” under the project “Nautilus”, 2006 (Greek).
<http://nautilos.ipet.gr/title.html>
- [MULT7]** Development of a dynamic non-immersive virtual reality application (virtual exhibition) for Greek traditional musical instruments, under the project “Polymnia - New Music Tools and Music Portal”, 2005 (Greek)
<http://www.ipet.gr/momi/>

- [MULT8] Multimedia title “Telecommuting - Teleconference”, under the project “E-QUALity - Supporting the adaptability of workers and SMEs in north-eastern Greece”, 2005 (Greek)
<http://www.ipet.gr/index2.php?lang=gr&mid=3&mod=projects>
- [MULT9] “Reconciling family and work”, under the project “E-QUALity - Supporting the adaptability of workers and SMEs in north-eastern Greece”, 2005 (Greek)
<http://www.ipet.gr/index2.php?lang=gr&mid=3&mod=projects>
- [MULT10] Multimedia title “Maganeaia 2003 - Presentation of non-widespread Olympic Sports”, 2003 (Greek).
- [MULT11] Multimedia title under the project “SIRENS Second phase: Physics Laboratory as a global technology centre for communication and learning”, 1999-2001 (Greek).
- [MULT12] Multimedia title under the project “SIRENS Second phase: COSMOS”, 1999-2000 (Greek).
- [MULT13] Three multimedia titles: “Physiology”, “Psychology” and “Health in Sports”, under the project “Reformation of the curriculum of the Department of Physical Education and Sport Science of DUTH”, 1999 (Greek).
- [MULT14] Participation in the implementation of multimedia title “Thrace in the Hellenic Parliament”, 1999 (Greek).
<http://www.ipet.gr/vouli/>
- [MULT15] Multimedia title “Child in Greek Art” in collaboration with the National Art Gallery & Al. Soutzos Museum (Department of Art Conservation and Restoration of Works of Art), 1998 (Greek - English).
- [MULT16] Multimedia title “Atlas of Greece” for Livanis Publishing Organization, 1997 (Greek), ISBN: 960-7534-10-7, <http://goo.gl/N45391> .
- [MULT17] Multimedia title " Basketball Courses with Multimedia ", Dept. of Physical Education and Sports Science of DUTH, 1996 (Greek).
- [MULT18] Multimedia title for the demonstration of project “Thracian Electronic Thesaurus, History and Culture, Environment, Tourism”, exhibition InfoSystem - HiTech 1996 (Greek).
- [MULT19] Multimedia title for the presentation of the third International Congress of Physical Education and Sports, Dept. of Physical Education and Sports Science of DUTH, May 1995 (Greek - English).
- [MULT20] Multimedia title for the presentation of the Hellenic Export Promotion Organization, 1994 (Greek).
- [MULT21] Multimedia educational title “Multimedia using multimedia”, application for presentations at seminars, 1994-1996 (Greek).
- [MULT22] Multimedia title for the presentation of the National Productivity Centre (Kavala Annex), 1994 (Greek).
- [MULT23] Multimedia title “Treasures of the Great Meteoro”, collaboration with the Apostolic Diakonia of the Church of Greece, 1994 (Greek).

9.1.2 Web applications and platforms:

- [WEB1] Platform for the presentation of 3D reconstructions based on photographic techniques, 2014 (English), <http://virtualworld.georgepavlides.info>
- [WEB2] Educational portal for the postgraduate course “Mobile Communications”, 2013 (English), <http://mobilecommunications.georgepavlides.info>
- [WEB3] Educational portal for the postgraduate course “Web applications design”, 2013 (English), <http://webdesign.georgepavlides.info>

- [WEB4] Educational portal for the course “Digital signal Processing”, 2012 (Greek), <http://dsp.georgepavlides.info>
- [WEB5] Educational portal for the course “Pattern recognition - neural networks”, 2012 (Greek), (Greek), <http://pattern.georgepavlides.info>
- [WEB6] Educational communication portal for graduate, diploma and post-graduate theses, 2012 (Greek), <http://theses.georgepavlides.info>
- [WEB7] Educational Facebook application for the course “Multimedia”, 2010, (Greek), <http://www.facebook.com/apps/application.php?id=143311339037450>
- [WEB8] Educational Facebook application for the course “Digital Photography and Image Processing”, 2010, (Greek), <http://www.facebook.com/apps/application.php?id=129580390424256>
- [WEB9] Personal portal, (English, Greek), <http://georgepavlides.info>
- [WEB10] Series of educational websites for the courses:
- “Computers”, <http://computers.georgepavlides.info/>
 - “Programming with MATLAB”, <http://matlab.georgepavlides.info/>
 - “Multimedia”, <http://multimedia.georgepavlides.info/>
 - “Digital Photography”, <http://photography.georgepavlides.info/>
- [WEB11] Personal website for Greek islands promotion based on dynamic web programming and Google technologies, 2009 (English), <http://greekislandmemories.com/>
- [WEB12] Web-based virtual walkthrough “Virtual Argostoli”, 2008, http://www.ipet.gr/3d_demo/argostoli/argostoli.wrl
- [WEB13] Educational website for the demonstration of teaching “Recognition” in Homer’s Odyssey, in Literature and in Science, 2007 (Greek), <http://odysseia.sepdek.net/>
- [WEB14] Portal of the project “Digitech III-2 - Internet application for the demonstration and education in three-dimensional digitization technologies”, 2005 (Greek, English), <http://www.ipet.gr/digitech2/>
- [WEB15] Website “Nautilus” for the homonymous project, 2006 (Greek), <http://naytilos.ipet.gr/>
- [WEB16] Website “Digitech III - Study of technologies of three-dimensional digitization”, 2005 (Greek, English), <http://www.ipet.gr/digitech/>
- [WEB17] Website “Virtual Museum of Greek Traditional Musical Instruments”, 2005 (Greek), <http://www.ipet.gr/momi/>
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- [WEB19] Cultural website “Karabournaki: Recording the past”, 2004 (Greek, English), <http://www.ipet.gr/karabournaki>
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- [WEB21] Website “Thracian Electronic Thesaurus - History and Culture, Nature, Tourism”, 1998 (Greek, English), <http://thesaurus.duth.gr/>
- [WEB22] Cultural website “Peloponnesian Folklore Foundation”, 1997 (English), <http://ipml-o.ee.duth.gr/pli/index.html>

9.1.3 Smart mobile device applications

- [MOB1] “i-Health” - app for the remote monitoring of medical data online and based on JSON data interchange protocol in collaboration with a specific kit for medical data measurements (English), 2014, App Store:

<https://itunes.apple.com/us/app/i-health/id928539620>

Android edition available at the Google Play Store:

https://play.google.com/store/apps/details?id=appinventor.ai_gpavlid.iHealth

- [MOB2] “Tiny remote monitor” - app for the remote monitoring of environmental quantities through the web using smart data interchange (English), 2014, Google Play: <https://play.google.com/store/apps/details?id=org.teiser.arduino>
- [MOB3] “Old Town of Xanthi Guide” - app of tourist information for the Old Town of Xanthi, Greece, based on QR-Codes’ identification (English), 2014, Google Play: <https://play.google.com/store/apps/details?id=com.bill.qrxanthiold>
- [MOB4] “Vision” - educational and testing app for facial recognition using OpenCV (English), 2013, Google Play: <https://play.google.com/store/apps/details?id=com.teox.vision>
- [MOB5] “Serres Guide” - app for information and guidance towards available pharmacies and gas stations for the town of Serres, Greece(Greek), 2013, Google Play: <https://play.google.com/store/apps/details?id=com.anaskous.serresGuide>

9.1.4 Computerization, industrial applications and automation:

- [IND1] Prototype application for the quality control of the mastiha of Chios (MATLAB), 2014.
- [IND2] Various Arduino automation applications.
- [IND3] Customer management software - application to hair salon, 2003.
- [IND4] Complete software package for business management - application to garage, 1996.
- [IND5] Business management application for military use, 1997.
- [IND6] Permits/punishment management software for the Army, 1994.
- [IND7] Software for the production organization of the SEKAP tobacco company, 1993.
- [IND8] Design and implementation of software for the simulation and the control of the tobacco kiln system for the SEKAP tobacco company, 1993.
- [IND9] Software for the computerization of services of DUTH (Dept. of Electrical and Computer Engineering, Dept. of the Environmental Engineering) and technical support, 1992-1995.
- [IND10] Software for budget management T/DE of DUTH, 1992.

10 Scientific publications

10.1 Dissertations

- [D1] Pavlidis, G., “**Segmentation of colour images**”, Doctoral dissertation, Department of Electrical and Computer Engineering, Democritus University of Thrace (2004)
- [D2] Pavlidis, G., “**Simulation of motion and control panel for an underwater remotely operated vehicle**”, Diploma thesis, Department of Electrical and Computer Engineering, Democritus University of Thrace (1994)

10.2 Peer-reviewed journals

- [J1] Pavlidis, G., Sevetlidis, V., “Demystifying Publishing To Europeana: A Practical Workflow For Content Providers”, *Scientific Culture - Journal of Applied Science and Technology to Cultural Issues*, Vol. 1, No. 1, pp. 1-8, 2015.
- [J2] Balla, A., Pavlogeorgatos, G., Tsiafakis, D., Pavlidis, G., “Recent Advances In Archaeological Predictive Modelling For Archaeological Research And Cultural Heritage Management”, *International Journal Mediterranean Archaeology and Archaeometry*, Vol. 14, No 4, pp. 143-153, 2014.
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- [J6] Stratis, J., Makarona, C., Lazidou, D., Gómez Sánchez, E., Koutsoudis, A., Pamplona, M., Pauswein, R., Pavlidis, G., Simon, S., Tsirliganis, N., “Enhancing the examination workflow for Byzantine icons: Implementation of information technology tools in a traditional context”, Vol. 15, No. 1, pp. 85-91, 2014.
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- [J8] Balla, A., Pavlogeorgatos, G., Tsiafakis, D., Pavlidis, G., “Locating Macedonian tombs using predictive modelling”, *Journal of Cultural Heritage*, *Journal of Cultural Heritage*, Vol. 14, No. 5, pp. 403-410, 2013.
- [J9] Charalampidou, M., Mouroutsos, S., Pavlidis, G., “Identifying aspects of Ambient Intelligence through a review of recent developments”, *Journal of Advanced Computer Science and Technology*, Vol. 1, No. 3, pp. 82-100, 2012.
- [J10] Koutsoudis, A., Makarona, C., Pavlidis, G., “Content-based navigation within virtual museums”, *Journal of Advanced Computer Science and Technology*, Vol. 1, No. 2, pp. 73-81, 2012.
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- [J15] Pavlidis, G., Koutsoudis, A., Arnaoutoglou, F., Tsioukas, V., Chamzas, C., “Methods for 3D Digitization of Cultural Heritage”, *Elsevier Journal of Cultural Heritage*, Vol. 8, Issue 1, pp. 93-98, Jan.-Mar. 2007.

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- [J17] Pavlidis, G., Chamzas, C., “Compressing the background layer in compound images using JPEG and data filling”, Elsevier Signal Processing: Image Communication, Vol. 20, Issue 5, pp. 487-502, Jun. 2005.
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- [J19] Politou, E., Pavlidis, G., Chamzas, C., “JPEG2000 and dissemination of cultural heritage databases over the Internet”, IEEE Transactions on Image Processing, Vol. 13, Issue 3, pp. 293-301, Mar. 2004.
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- [C1] Kiourt, C., Koutsoudis, A., Arnaoutoglou, F., Petsa, G., Markantonatou, S., Pavlidis, G., “A dynamic web-based 3D virtual museum framework based on open data”, accepted in the International Conference Digital Heritage 2015, (Granada, Spain), Sept. 28-Oct. 2, 2015.
- [C2] Pavlidis, G., Mouroutsos, S., Sevetlidis, V., “Efficient Colour Sorting of Chios Mastiha”, 2014 IEEE International Conference on Imaging Systems & Techniques IEEE IST2014, (Santorini, Greece), Oct. 14-17, 2014
- [C3] Balla, A., Pavlogeorgatos, G., Tsiafakis, D., Pavlidis, G., “Recent advances in archaeological predictive modelling: contribution to Cultural Resource Management and archaeological research”, Abstract in the 1st International Workshop on Virtual Archaeology: Museums & Cultural Tourism VAMCT 2013, (Delphi, Greece), Sept. 25-28, 2013
- [C4] Mouroutsos, S., Charalampidou, M., Pavlidis, G., “Learning advanced telemetry and telecontrol systems in the laboratory”, International Conference on Engineering Education ICEE 2012, (Turku, Finland), Jul. 30 - Aug. 3, 2012.
- [C5] Charalampidou, M., Mouroutsos, S., Pavlidis, G., “Advanced telemetry and telecontrol using smart sensors”, The 14th IASTED International Conference on Control and Applications CA 2012, (Crete, Greece), Jun. 18-20, 2012.
- [C6] Μπάλλα, Α., Παυλογεωργάτος, Γ., Τσιαφάκη, Δ., Παυλίδης, Γ., “Μοντελοποίηση πρόβλεψης πιθανών θέσεων μακεδονικών τάφων για πολιτιστική διαχείριση”, 7ο Πανελλήνιο Συνέδριο HellasGIs 2012, (Αθήνα, Ελλάδα), 17-18 Μαΐου 2012.
- [C7] Pavlidou, F., Charalampidou, M., Mouroutsos, S., Pavlidis, G., “Gesture-based presentation control”, 5th PanHellenic Electrical Engineering Students Conference 2012, (Xanthi, Greece), Apr. 6-7, 2012.
- [C8] Balla, A., Pavlogeorgatos, G., Tsiafakis, D., Pavlidis, G., “Predicting Macedonian tombs' locations using GIS, predictive modelling and fuzzy logic”, Computer Applications and Quantitative Methods in Archaeology CAA 2012, (Southampton, UK), Mar. 26-30, 2012.

- [C9] Koutsoudis, A., Pavlidis, G., “Content-based search and retrieval within complex 3D scenes - An application to cultural heritage”, 16th International Conference on Cultural Heritage and New Technologies-CHNT 2011, (Vienna, Austria), Nov. 14-16, 2011.
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- [C11] Pavlidis, G., Arnaoutoglou, F., Koutsoudis, A., Chamzas, C., “Virtual Walkthrough in a Lost Town - The Virtual Argostoli”, IASTED Computer Graphics and Imaging CGIM 2010, (Innsbruck, Austria), Feb. 17-19, 2010.
- [C12] Koutsoudis, A., Arnaoutoglou, F., Pavlidis, G., Tsiafakis, D., Chamzas, C., “A Versatile Workflow for 3D Reconstructions and Modelling of Cultural Heritage Sites Based on Open Source Software”, Conference on Virtual Systems and Multimedia dedicated to Cultural Heritage VSMM2008, (Limassol, Cyprus), Oct. 20-26, 2008.
- [C13] Pavlidis, G., Makarona, C., Arnaoutoglou, F., Koutsoudis, A., Chamzas, C., “Museums In The Virtual World”, International Symposium “Information and Communication Technologies in Cultural Heritage”, (Ioannina, Greece), Oct. 16-18, 2008.
- [C14] Chamzas, C., Pavlidis, G., Koutsoudis, A., “Advanced techniques in the documentation and dissemination of Culture”, 14th Conference on Informatics Technology, (Thessaloniki, Greece), Oct. 2-5, 2008.
- [C15] Rakitina, E., Rakitin, I., Staleva, V., Arnaoutoglou, F., Koutsoudis, A., Pavlidis, G., “An Overview of 3D Laser Scanning Technology”, in Proc. of the International Scientific Conference, (Varna, Bulgaria), Jun. 26-28, 2008.
- [C16] Koutsoudis, A., Pavlidis, G., Arnaoutoglou, F., Tsiafakis, D., Chamzas, C., “A 3D Pottery Database for Benchmarking Content Based Retrieval Mechanisms”, Workshop on 3D Object Retrieval in Eurographics 2008 International Conference, (Crete, Greece), Apr. 14-18, 2008.
- [C17] Koutsoudis, A., Arnaoutoglou, F., Pavlidis, G., Tsioukas, V., Chamzas, C., “Creating Internet Friendly 3D Tours Using 3D Range Scanner Data”, 3D Colour Laser Scanning Conference, (UCL London, UK), Mar. 27-28, 2008.
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- [C40] Mouroutsos, S., Pavlidis, G., “Production Programming - Applied to a Cigarette Factory”, International Conference on Machine Automation ICMA 1994 (Tampere, Finland), Feb. 15-18, 1994.

10.4 Teaching material and lecture notes

- [LECN1] WEB APPLICATIONS DESIGN, Teaching material (English), MSc in Innovation in Technology & Entrepreneurship, Technological Educational Institution of East Macedonia and Thrace, 2013, online at <http://webdesign.georgepavlides.info>
- [LECN2] MOBILE COMMUNICATIONS, Teaching material (English), MSc in Innovation in Technology & Entrepreneurship, Technological Educational Institution of East Macedonia and Thrace, 2013, online at <http://mobilecommunications.georgepavlides.info>
- [LECN3] DIGITAL SIGNAL PROCESSING, Teaching material (Greek), Dept. of Informatics Engineering, Technological Educational Institution of Central Macedonia, 2012, online at <http://dsp.georgepavlides.info>
- [LECN4] PATTERN RECOGNITION - NEURAL NETWORKS, Teaching material (Greek), Dept. of Informatics Engineering, Technological Educational Institution of Central Macedonia, 2012, online at <http://pattern.georgepavlides.info>
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- [LECN6] PROGRAMMING WITH MATLAB, Teaching material (Greek), Dept. of Electrical and Computer Engineering, Democritus University of Thrace, 2000-2002, online at <http://matlab.georgepavlides.info>
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