George Papagiannakis

Civil status:	Married with two children
Nationality:	Hellenic
Birth date/place:	13/11/1976, Athens, Greece
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Summary

George Papagiannakis is a computer scientist specialized in computer graphics and virtual-augmented reality. He obtained his PhD (Hons) in Computer Science at the University of Geneva in Switzerland in 2006, his M.Sc. (Hons) in Advanced Computing at the University of Bristol in UK and his B.Eng. (Hons) in Computer Systems Engineering, at the University of Manchester, UK.

He is associate professor at the Computer Science department of the University of Crete, Greece and Research Fellow at the Computer Vision and Robotics Laboratory in the Institute of Computer Science of the Foundation for Research and Technology Hellas, Heraklion, Greece. Prior to this post, he had worked as a senior researcher and research assistant at MIRALab, University of Geneva with Prof. Nadia Magnenat-Thalmann. He has also been employed as consultant and lead computer graphics programmer in the industrial computer graphics simulation sector.

His research and development interests are confined in the areas of interactive computer graphics, mixed reality presence, illumination models and real-time rendering, virtual heritage, GPU programming, gamification, geometric algebra and real-time simulation frameworks. He has actively been involved in the specification, contribution and co-management of several European and industry funded research and development projects in these areas. Currently he is working on high-fidelity presence, interaction, storytelling and gamification with virtual characters in mixed reality. He has more than 60 publications in the field, over 1200 citations and he is a board member of the Computer Graphics Society (CGS) and member of the IEEE, ACM, Eurographics and SIGGRAPH professional societies. He is associate editor of the Springer Visual Computer Journal, and evaluator and reviewer for the European Commission and other National Research Funding agencies.

In 2011 he has been awarded with a Marie-Curie Intra-European Fellowship for Career Development from the European Commission's Research Executive Agency. In 2016 he served as Conference Chair of the 33rd Computer Graphics International (CGI'16) annual conference. In 2016 he co-founded ovidVR, a FORTH spin-off startup company in which he serves currently as CTO.

Research & Professional Experience

[August 2016 – now] *ovidVR SA, Greece*
Co-founder and CTO in FORTH spin-off startup company

- **Research & Development** in real-time 3D computer graphics, mixed reality, gamification, presence, GPU programming for psychomotor medical training simulation

[August 2011 – now] *University of Crete, Computer Science Department, Heraklion, Greece*
Associate Professor in Computer Graphics

- **Teaching and Research** in real-time 3D computer graphics, mixed reality, GPU programming, presence, gamification
- **Supervision** of PhD, MSc and BSc students
- **Elected as Assoc. Prof.**, May 2017
- **Tenured as Assist. Prof.**, January 2015
- **Appointed as tenure-track Assist. Prof.**, August 2011

[April 2011 – now] *Foundation for Research and Technology Hellas, Greece*
Affiliated Research Fellow

- **Research** in high-fidelity presence, gamification, geometric algebra and interaction in mixed reality using computer graphics techniques, algorithms and methodologies
- **Principal Investigator** of the ITN-DCH and ViMM EU projects, **Marie-Curie Research Fellow** in the HiFi-PRINTER IEF EU project, **Affiliated research Fellow** in the RealEstate 2.0 and TIMESTORM EU projects

[September 2010 – March 2011] *3DTouch S.A.R.L Geneva, Switzerland*
Lead Graphics Programmer

- **Industrial applied Research** in real-time game engine utilization for rapid prototyping, architectural pre-visualization, urban planning, presence and interaction
- **3D Game Application Development** of commercial computer graphics applications utilizing latest game engines (Unigine), C++, GLSL and scripting languages (UnigineScript), linear and non-linear event mechanisms, interactive simulation and animation of dynamic 3D objects and scripted camera view paths

[June 2006 – December 2009] *MIRALab-University of Geneva, Switzerland*
Senior Researcher

- **Post-doc** researcher on real-time computer graphics, carrying out research and development in illumination & animation models and real-time VR / AR simulations of dynamic 3D scenes
- **Lecturer** for the "Simulating body and face", MSc Course 4304045, University of Geneva, January 2007 – September 2007
- **Deputy Coordinator** of the INTERMEDIA EU funded NoE R&D project.
- **Contributor and co-manager** of INDIGO, EPOCH FP6 EU funded R&D projects.
- **Co-author** of new EU project proposals. **Co-supervisor** of master and PhD student contributions.
- **Publishing** research results in international refereed scientific journals and conferences

[November 1999 – June 2006] *MIRALab-University of Geneva, Switzerland*
Research Assistant

- **Full-time researcher**, team-leader, author, contributor and deputy representative of EU IST and INCO-MED research projects publishing research results in international refereed scientific journals and conferences in the research domains of: 3D simulation of virtual humans (CAHRISMA FP5 Project), GPU programming, illumination-rendering (ERATO FP5 Project), virtual heritage (LIFEPLUS FP5 Project), VR and AR interaction (JUST, STAR FP5 projects).
- **Co-author** of new EU project proposals.
- **Publishing** research results in international refereed scientific journals and conferences

Education

[January 2002 – June 2006] *University of Geneva, Switzerland*

PhD (Honours) in Computer Science

- "An illumination registration model for dynamic virtual humans in mixed reality", Faculty of Sciences, Department of Informatics, Thesis Director: Prof. Nadia Magnenat-Thalmann

[October 1998 - October 1999] *University of Bristol, UK*

MSc (Honours) in Global Computing and Multimedia (Advanced Computing)

- "Virtual Reality visualization of the reconstruction of an ancient Greek residence", Computer Science Department, Thesis Director: Prof. Alan Chalmers

[September 1995 - June 1998] *University of Manchester, UK*

Bachelor of Engineering (Honours) in Computer Systems Engineering

- Upper Second class Honours degree (2.1), Department of Electrical and Electronic Engineering

Key Publications

Books

B1. Ioannides, M., Magnenat-Thalmann, N., **Papagiannakis, G.**, (Eds), Mixed Reality and Gamification for Cultural Heritage, Springer-Nature, DOI: 10.1007/978-3-319-49607-8, 2017

Book Chapters

C1. **Papagiannakis, G.**, "Gamification and Serious Games", N. Lee (Ed.), Encyclopedia of Computer Graphics and Games, Springer International Publishing, DOI: 10.1007/978-3-319-08234-9, 2017

C2. Trahanias, P., **Papagiannakis, G.,** Tsiridis, E., "Psychomotor Surgical Training in Virtual Reality", Master Case Series & Techniques: Adult Hip, Springer, 2017

C3. Papaefthymiou, M., **Papagiannakis, G**., "Gamified Augmented and Virtual reality character rendering and animation enabling technologies", Mixed Reality and Gamification for Cultural Heritage, Ioannides, M., Magnenat-Thalmann, N., Papagiannakis, G. (Eds.), Springer, DOI: 10.1007/978-3-319-49607-8, 2017

C4. Zikas P., Bachlitzanakis V., Papaefthymiou M., **Papagiannakis G.**, "A Mobile, AR Inside-Out Positional Tracking Algorithm, (MARIOPOT), Suitable for Modern, Affordable Cardboard-Style VR HMDs", In: Ioannides M. et al. (eds) Digital Heritage. Progress in Cultural Heritage: Documentation, Preservation, and Protection, Lecture Notes in Computer Science, vol 10058. Springer, also presented in EuroMed16, Larnaca, 2016

C5. Papanikolaou, P., **Papagiannakis, G.,** "Real-time Separable Subsurface Scattering for animated virtual characters", GPU Computing and Applications, Springer Singapore, 2015, pp. 53-67, also presented in 2013 Symposium on GPU Computing and Applications, Singapore

C6. **Papagiannakis, G.**, Greassidou, E., Trahanias, P., Tsioumas, M., "A geometric algebra framework for mobile Augmented Reality simulations in digital heritage sites", Lecture Notes in Computer Science, Springer-Verlag, 2014, also presented in 2014 International Conference in Cultural Heritage (2nd best-paper award), Euromed14, Limassol, 2014

C7. Tato, M., Papanikolaou, P., **Papagiannakis, G.** "From Real to Virtual Rapid Architectural Prototyping", Lecture Notes in Computer Science, Springer-Verlag Berlin Heidelberg 7616, 505–512, also presented in International Conference in Cultural Heritage, Euromed12, Limassol, 2012

C8. Magnenat-Thalmann, N., **Papagiannakis, G.,** Chaudhuri, P., "Applications of Interactive virtual humans in mobile augmented reality", Encyclopedia of Multimedia (2nd Edition), pp. 362-368, ISBN: 978-0-387-74724-8, Springer, 2008

C9. **Papagiannakis, G.,** Magnenat-Thalmann, N., "Virtual Worlds and Augmented Reality in Cultural Heritage Applications", Recording, Modeling and Visualization of Cultural Heritage - Baltsavias et al. (eds), pp. 419-430, ISBN-10: 041539208X, Taylor & Francis Group, 2006

C10. Vacchetti, L., Lepetit, V., Ponder, M., **Papagiannakis, G.,** Fua, P., Thalmann, D., Magnenat-Thalmann, N., "Stable Real-time AR Framework for Training and Planning in Industrial Environments", Virtual Reality and Augmented Reality Applications in Manufacturing, Ong, S. K., Nee, A.Y.C. (eds), pp.125-142, ISBN: 1-85233-796-4, Springer-Verlag, 2004

In scientific journals

J1. Papaefthymiou, M., **Papagiannakis, G.,** "Real-time rendering under distant illumination with Conformal Geometric Algebra", Mathematical Methods in the Applied Sciences, John Wiley & Sons, 2017

J2. Argento, E., **Papagiannakis, G.**, Baka, E., Maniadakis, M., Trahanias, P., Nestoros, I., "Augmented Cognition via Brainwave Entrainment in Virtual Reality: an open, integrated brain augmentation in a neuroscience system approach", Augmented Human Research Journal, Springer, 2017

J3. Papaefthymiou M., Hildenbrand D.and **Papagiannakis G.,** "A Conformal Geometric Algebra code generator comparison for Virtual Character Simulation in Mixed Reality", Advances in Applied Clifford Algebras Journal, Springer, also to be presented in GACSE workshop, Computer Graphics International 2016, CGI'16, Heraklion, Greece, 2016

J4. Papaefthymiou, M., Hildenbrand, D., **Papagiannakis, G.,** "An inclusive Conformal Geometric Algebra GPU animation interpolation and deformation algorithm", The Visual Computer Journal, Springer, 2016, also to be presented in Computer Graphics International 2016, CGI'16, Heraklion, Greece, 2016

J5. Kateros, S., Georgiou, S., Papaefthymiou, M., **Papagiannakis, G.,** Tsioumas, M., "A comparison of gamified, immersive VR curation methods for enhanced presence and human-computer interaction in digital humanities", International Journal of Heritage in the Digital Era, vol. 4, no 2, 2015, also presented in "The 1st International Workshop on ICT for the Preservation and Transmission of Intangible Cultural Heritage", Euromed14

J6. **Papagiannakis, G.,** Greassidou, E., Trahanias, P., Tsioumas, M., "Mixed-reality geometric algebra animation methods for gamified intangible heritage," International Journal of Heritage in the Digital Era, vol. 3, No.4, pp. 683–699, April 2014

J7. Foni, A., **Papagiannakis, G.,** N., Magnenat-Thalmann, N., "A Taxonomy of 2D and 3D Visualization Technologies for Cultural Heritage Applications", ACM Journal on Computing and Cultural Heritage, Volume 3, Issue 1, pp. 1-21, June 2010

J8. Magnenat-Thalmann, N., **Papagiannakis, G.,** "Recreating Daily Life in Pompeii", VAR-Virtual Archaeology Review, ISSN 1989-9947, also presented in Arqueologica 2.0 (2009), vol. 1 (2) pp. 16-20, May 2010

J9. Chaudhuri, P., **Papagiannakis, G.,** Magnenat-Thalmann, N., "Self-adaptive animation based on user perspective", The Visual Computer, Springer-Verlag, 24(7-9), pp. 525-533, July 2008, also presented in CGI08

J10. Magnenat-Thalmann, N., Peternier, A., Righetti, Lim, M., **Papagiannakis, G.,** Fragopoulos, T., Lambropoulou, K., Barsocchi, P., Thalmann, D., "A virtual 3D mobile guide in the INTERMEDIA project", The Visual Computer, Springer-Verlag, Volume 24, Numbers 7-9, pp. 827-836, July 2008, also presented in CGI08

J11. **Papagiannakis, G.,** Singh, G., Magnenat-Thalmann, N., "A survey of mobile and wireless technologies for augmented reality systems", Journal of Computer Animation and Virtual Worlds, John Wiley and Sons Ltd, 19, 1, pp. 3-22, February 2008

J12. Foni, A., **Papagiannakis, G.,** Cadi-Yazli, N., Magnenat-Thalmann, N., "Time-Dependent Illumination And Animation Of Virtual Hagia-Sophia", International Journal of Architectural Computing, Multi-Science Publishing, issue 02, volume 05, pp. 284-301, July 2007

J13. **Papagiannakis, G.,** Magnenat-Thalmann, N., "Mobile Augmented Heritage: Enabling Human Life in Ancient Pompeii", The International Journal of Architectural Computing, Multi-Science Publishing, issue 02, volume 05, pp. 395-415, July 2007

J14. Magnenat-Thalmann, N., Foni, A., **Papagiannakis, G.,** Cadi-Yazli, N., "Real-time Animation and Illumination in Ancient Roman Sites", The International Journal of Virtual Reality, IPI Press, vol. 6, no.1, pp. 11-24, March 2007

J15. Egges, A., **Papagiannakis, G.,** Magnenat-Thalmann, N., "Presence and Interaction in Mixed Reality Environments", The Visual Computer, Springer-Verlag, Volume 23, Number 5, pp. 317-333, May 2007

J16. **Papagiannakis, G.,** Schertenleib, S., O'Kennedy, B., Poizat, M., Magnenat-Thalmann, N., Stoddart, A., Thalmann, D., "Mixing Virtual and Real scenes in the site of ancient Pompeii", Journal of Computer Animation and Virtual Worlds, vol. 16, issue 1, John Wiley and Sons Ltd, pp. 11-24, February 2005

In proceedings of international refereed conferences and workshops

P1. Papaefthymiou, M., Nikolakopoulou, V., Leventis, G., Domajnko, M., Ioannides, M., **Papagiannakis, G.,** & Santos, P. (2017). Projecting our Past to the Future - Challenges and Results: The Case of Asinou church. In S. Robert & B. Štular (Eds.), 15th EUROGRAPHICS Workshop on Graphics and Cultural Heritage, Graz: Eurographics Association, October 2017

P2. Papaefthymiou, M., Kanakis, M., Geronikolakis, E., Nohos, A., **Papagiannakis, G.,** "Rapid reconstruction and simulation of virtual characters in Mixed Reality environments", ITN-DCH final conference, Olimje, Slovenia, May 2017

P3. Zikas, P., Bachlitzanakis, V., Papaefthymiou, M., Kateros, S., Georgiou, S., Lydatakis, N., **Papagiannakis, G.,** "Mixed Reality Serious Games for smart education", European Conference on Games Based Learning 2016, ECGBL'16, Paisley, Scotland, October 2016

P4. Zikas, P., Papaefhtymiou, M., Mpaxlitzanakis, V., **Papagiannakis, G.,** "Life-sized Group and Crowd simulation in Mobile AR", Computer Animation and Social Agents 2016, CASA'16, ACM Press, May 2016

P5. Papaefthymiou, M., Feng, A., Shapiro, A., Papagiannakis, G., "A fast and robust pipeline for populating mobile AR scenes with gamified virtual characters". ACM SIGGRAPH-ASIA 2015, Symposium On Mobile Graphics and Interactive Applications, Kobe, ACM Press, November 2015

P6. Papaefthymiou, M., **Papagiannakis, G.,** Aristidou, A., Ioannides, M., "A conformal geometric algebra framework for mixed reality and mobile display", Applied Geometric Algebra in Computer Science and Engineering 2015, AGACSE2015, Barcelona, July 2015

P7. Zidianakis, E., **Papagiannakis, G.,** and Stephanidis, C., "A cross-platform, remotely-controlled mobile avatar simulation framework for AmI environments", ACM SIGGRAPH-ASIA 2014, Symposium On Mobile Graphics and Interactive Applications, Shenzhen, ACM Press, December 2014

P8. **Papagiannakis, G.,** Papanikolaou, P., Greassidou, E., and Trahanias, P., glGA: an OpenGL Geometric Application framework for a modern, shader-based computer graphics curriculum. Eurographics2014, Education Papers, 1–8, Strasbourg, April 2014

P9. **Papagiannakis, G.,** "Geometric algebra rotors for skinned character animation blending", ACM SIGGRAPH-ASIA 2013, Technical Brief, Hong Kong, ACM Press, November 2013

P10. Arnold, D., Day, A., Glauert, J., Haegler, S., Jennings, V., Kevelham, B., Laycock, R., Magnenat-Thalmann, N., Maïm, J., Maupu, D., **Papagiannakis, G.,** Thalmann, D., Yersin, B., and Rodriguez-Echavarria, K., "Tools for Populating Cultural Heritage Environments with Interactive Virtual Humans", Open Digital Cultural Heritage Systems, EPOCH Final Event 2008, Rome, February 2008

P11. Chaudhuri, P., **Papagiannakis, G.,** Magnenat-Thalmann, N., "Camera-based Gaze Control for Virtual Characters", ENACTIVE 2007, Grenoble, November 2007

P12. Peternier, A., Righetti, X., Hopmann, M., Thalmann, D., Repetto, M., **Papagiannakis, G.,** Davy, P., Lim, M., Magnenat-Thalmann, N., Barsocchi, P., Fragopoulos, T., Serpanos, D., Gialelis, Y., Kirykou, A.,"Chloe@University: an indoor, mobile mixed reality guidance system", ACM Virtual Reality Software and Technology 2007 (VRST07), poster paper, ACM Press, Newport Beach, CA, November 2007

P13. Egges, A., **Papagiannakis, G.,** Magnenat-Thalmann, N., "An Interactive Mixed Reality Framework for Virtual Humans", Cyberworlds 2006, IEEE Computer Society, Lausanne, September 2006

P14. **Papagiannakis, G.,** Kim, H., Magnenat-Thalmann, N., "Believability and Presence in Mobile Mixed Reality Environments", IEEE VR2005 Workshop on Virtuality Structures, Bonn, March 2005

P15. **Papagiannakis, G.,** Foni, A., Magnenat-Thalmann, N., "Practical Precomputed Radiance Transfer for Mixed Reality", Proc. of Virtual Systems and Multimedia 2005 (VSMM05), pp. 189-199, VSMM Society, Ghent, October 2005

P16. Magnenat-Thalmann, N., Cordier, F., Seo, H., **Papagiannakis, G.,** "Modeling of Bodies and Clothes for Virtual Environments", Proc. of Cyberworlds 2004, pp. 201 – 208, IEEE Computer Society, Tokyo, November 2004

P17. Magnenat-Thalmann, N., **Papagiannakis, G.,** Foni, A., Arevalo-Poizat, M., Cadi-Yazli, N., "Simulating life in ancient sites using mixed reality technology", CEIG04, Seville, May 2004

P18. **Papagiannakis, G.,** Schertenleib, S., Ponder, M., Arevalo-Poizat, M., Magnenat-Thalmann, N., Thalmann, D., "Real-Time Virtual Humans in AR Sites", 1st European Conference on Visual Media Production (CVMP), pp. 273–276, IEEE, Los Alamitos, May 2004

P19. Ponder, M., Herbelin, B., Molet, T., Schertenlieb, S., Ulicny, B., **Papagiannakis, G.,** Magnenat-Thalmann, N., Thalmann, D., "Immersive VR Decision Training: Telling Interactive Stories Featuring Advanced Virtual Human Simulation Technologies ", Proc. of 9th Eurographics Workshop on Virtual Environments 2003, pp. 97-106, The EG Association, ACM Press, Zurich, May 2003

P20. Ponder, M., **Papagiannakis, G.,** Molet, T., Magnenat-Thalmann, N., Thalmann, D.," VHD++ Framework: Extendible Game Engine with Reusable Components, for VR/AR R&D featuring Advanced Virtual Character Simulation Technologies", Proc. of Computer Graphics International03, pp. 96-104, IEEE Computer Society Press, Tokyo, July 2003

P21. Vacchetti, L., Lepetit, V., **Papagiannakis, G.,** Ponder, M., Fua, P., Magnenat-Thalmann, N., Thalmann, D., "Stable Real-Time Interaction Between Virtual Humans and Real Scenes", 3-D Digital Imaging and Modeling 2003 (3DIM03), pp. 449-456, Banff, Alberta, IEEE Computer Society Press, October 2003

P22. **Papagiannakis, G.,** Foni, A., Magnenat-Thalmann, N., "Real-Time recreated ceremonies in VR restituted cultural heritage sites", CIPA XIXth International Symposium, pp.235-240, Antalya, September 2003

P23. Ponder, M., Herbelin, B., Molet, T., Scherteneib, S., Ulicny, B., **Papagiannakis, G.,** Magnenat-Thalmann, N., Thalmann, D., "Interactive Scenario Immersion: Health Emergency Decision Training in JUST Project", Proc. Of 1st International Workshop on Virtual Reality Rehabilitation, VRMHR2002, VRlab-EPFL, pp. 87- 101, Lausanne, November 2002

P24. Foni, A., **Papagiannakis, G.,** Magnenat-Thalmann, N., "Virtual Hagia Sophia: Restitution, Visualization and Virtual Life Simulation ", UNESCO World Heritage Congress Proceedings, Beijing, October 2002

P25. **Papagiannakis, G.,** Ponder, M., Molet, T., Kshirsagar, S., Cordier, F., Magnenat-Thalmann, N., Thalmann, D., "LIFEPLUS: Revival of life in ancient Pompeii", Virtual Systems and Multimedia 2002 (VSMM02), Gyeongju, September 2002

P26. **Papagiannakis, G.,** L'Hoste, G., Foni, A., Magnenat-Thalmann, N., "Real-Time Photo Realistic Simulation of Complex Heritage Edifices", Proc. of Virtual Systems and Multimedia 2001 (VSMM01), pp. 218-227, IEEE Computer Society Press, Berkeley, September 2001

Other publications, reports and tutorial notes

R1. Hildenbrand, D., Hitzer, E., **Papagiannakis, G.** (2017), "Preface for Special Issue on Geometric Algebra in Computer Science and Engineering", Advances in Applied Clifford Algebras, 1–2. http://doi.org/10.1007/s00006-017-0799-6

R2. Thalmann, D., Trahanias, P. & **Papagiannakis, G.,** "CGI 2016 Editorial", The Visual Computer, (2016) 32: 675. doi:10.1007/s00371-016-1271-7, June 2016

R3. Papaefthymiou, M., Plelis, K., Mavromatis, D., **Papagiannakis, G.,** "Mobile Virtual Reality featuring a six degrees of freedom interaction paradigm in a virtual museum application", Technical Report, FORTH-ICS/TR-462, December 2015

R4. Lydatakis, N., **Papagiannakis, G.,** "Real-time High Dynamic Range (HDR) shadowing for dynamic character simulation", Technical Report, FORTH-ICS/TR-460, December 2015

R5. **Papagiannakis, G.,** Argento, E., Mpaka, E., Maniadakis, M., Trahanias, P., "A virtual reality brainwave entrainment method for human augmentation applications", Technical Report, FORTH-ICS/TR-458, September 2015

R6. Schellenberg, R., Tato, M., **Papagiannakis, G.,** "From Real to Virtual Rapid Architectural Prototyping", Technical Report, FORTH-ICS/TR-425, October 2011

R7. Networked Media Task Force (NM-TF), "Networked Media of the Future", European Commission, Information Society and Media, ISBN: 978-92-79-06864-5, 2007

R8. Magnenat-Thalmann, N., **Papagiannakis, G.,** Egges, A., Lyard, E., "Real-time Inhabited Virtual Worlds and Interaction - interactive virtual worlds module", Eurographics 2006 Tutorial Notes, URI: http://dx.doi.org/10.2312/egt.20061065, EG'06, 2006

R9. Magnenat-Thalmann, N., O'Kennedy, B., Thalmann, D., **Papagiannakis, G.,** Glardon, P., Joslin, C., Kim, H., "Real-Time Virtual Characters for VR/AR applications", Computer Graphics International (CGI) 2004 Tutorial Notes, CGI 2004, 2004

Dissertations

D1. **Papagiannakis, G.,** "An Illumination Registration Model for Dynamic Virtual Humans in Mixed Reality", PhD Thesis (Hons), University of Geneva, Sc. 3795, CUI: libre-accès * classif.: I.3.7 PAP * cote: CUIB 2364, June 2006

D2. **Papagiannakis, G.,** "Virtual Reality Visualization of the Reconstruction of an Ancient Greek Residence", MSc. Thesis, University of Bristol, June 1999

Citations to publications

Google Scholar metrics, December 2017

- Number of Citations: 1219
- h-index: 17

Professional Activities

Funded research projects

1. VRADA (Hellenic Ministry of Economy and Development, Partnership Agreement (PA), 01/04/2018-31/03/2021): Project Scientific Coordinator, *EU Contribution: 120,000.00 EUR*

2. ViMM (Horizon2020 CULT-COOP CSA 727107, 01/11/2016-30/04/2019): Principal Investigator, *EU Contribution: 97,500.00 EUR*

3. TIMESTORM (FET Proactive 641100, 01/01/2015-07/01/2018), Affiliated Research Fellow

4. RealEstate2.0 Informed Real-Estate Services: Leveraging Web 2.0 (GSRT, NSRF 2007-2013, Co-operation 2011, 23/04/2013 – 31/10/2015), Affiliated Research Fellow

5. ITN-Digital Cultural Heritage (Marie-Curie ITN 608013, 01/10/2013-01/10/2017): Principal Investigator, *EU Contribution: 310,706.00 EUR*

6. Hifi-PRINTER (Marie-Curie IEF: 274669, 01/04/2011-30/03/2014): Principal Marie-Curie Research Fellow Scientist, principal project author, *EU contribution: 218,000.00 EUR*

7. HDRi (COST Action 4208/10, 20/01/2011-15/05/2015): Principal Investigator & member of management committee, *Total EU contribution: 450,000.00 EUR*

8. FORTH-3DTouch S.A., Principal Investigator, s/w development agreement (1/4/12 – 1/7/12), contribution: *6000.00 EUR*

9. INTERMEDIA (IST-2006-38419, 01/10/2006-30/9/2010) NOE: Deputy project coordinator, co-author & contributor, *Total EU contribution: 5,596,000 EUR*

10. INDIGO (IST-045388, 01/02/2007-30/06/2010) STREP: Deputy organization representative, co-author & contributor, *Total EU contribution: 2,079,999 EUR*

11. EPOCH (IST-2002-507382, 01/04/2004-30/03/2008), ENACTIVE (IST-2004-002114, 01/01/2004-30/12/2007) NoEs: Deputy organization representative, co-author & contributor, *Total EU contribution: 7,880,000 EUR and 5,000,000 EUR respectively*

12. LIFEPLUS (IST-2001-34545, 01/04/2002-30/09/2004) STREP: Co-author, contributor and deputy project technical coordinator. *LIFEPLUS was ranked first in the 2002 Networked Audiovisual Systems Directorate D proposals review, amongst 150 other submissions, Total EU contribution: 1,452,000 EUR*

13. CAHRISMA (ICA3-1999-10023, 01/02/2000-01/02/2003), ERATO (ICFP-502A3PR03, 01/02/2003-01/01/2006) STREPs: Deputy organization representative, co-author and contributor, *EU contribution: 595,670.00 EUR and 893,927.00 EUR respectively*

14. STAR (IST-2000-28764, 01/07/2001-30/06/2004), JUST (IST-1999-12581, 01/01/2000-30/05/2003) STREPs: Deputy organization representative, co-author & contributor, *Total EU contribution: 1,350,000 EUR and 1,527,500 EUR respectively*

Invited Talks in Peer-reviewed, International Conferences

1. "Enabling character simulation technologies across the XR continuum", ViMM Thematic Area Workshop, University of Geneva, Geneva, 2017

2. "Gamification with virtual characters at the borders of mixed reality and algebras", Computer Animation and Social Agents 2016 (CASA'16), Keynote Speech, University of Geneva, Geneva 2016

3. "Mobile, cross-platform, life-size animated virtual characters in indoors and outdoors AR heritage sites for high-fidelity presence and interaction", EVA-MINERVA2014, XIth Annual International Conference for Professionals in Cultural Heritage, Jerusalem, 2014

4. "HDR Image Based Lighting and illumination models for dynamic and static virtual characters", HDRi Summer School, Heraklion, 2013

5. "Bridging real and virtual worlds", Virtual World Conference, Serious Games Institute, University of Coventry 2010

6. "Presence and Interaction in Mixed Reality Heritage", University of Castilla-La Mancha, Ciudad Real, 2010

7. "Recreating daily life in Pompeii", Keynote Speech, Arqueologica 2.0, Seville, 2009

8. "Real-time realistic rendering and subtle body movements for cultural heritage virtual actors", Keynote Speech, Cultural Convergence 06, Foundation of Hellenic World, Athens, 2006

9. "Real-time frameworks for VR/AR simulation", University of Geneva, Geneva, 2005

10. "Real-time GPU based rendering", EPFL, Lausanne, 2004

11. "Virtual Cultural Heritage", Naturalia-Artificialia-Virtualia01, University of Aegean, Mytilene, 2001

Invited Talks in International Tutorials, Summer Schools and Panels

1. "Rules and Models versus Data and Machine Learning in Graphics and Vision", (panel), CGI17, Yokohama, 2017

2. "Gamified Presence in virtual museums", (tutorial), CGI17, Yokohama, 2017

3. "Mixed Reality and Gamification for Cultural Heritage", Politecnico di Milano, Department of Architecture & Construction Engineering Summer School, Milan, 2016

4. "Gamified interaction and real-time rendering in Mixed Reality for Cultural Heritage", (ITN-DCH Summer School), co-located with CGI16, Heraklion, 2016

5. "Gamification, Presence and Interaction in Mixed Reality using Geometric Algebra", Kogacuin University, Tokyo, 2015

6. "Presence and Interaction in Mixed Reality", University of Geneva Summer School, Zermatt, 2010

7. "Knowledge representation in virtual heritage: the state of the art and the emerging challenges", (panel), Arqueologica 2.0, Seville, 2009

8. "Outlooks for long term academic research in FP7 in the Networked media area", (Invitation-only panel organized by EC), EC DG INFSO, Brussels, 2007

9. "Enaction and the Concept of Presence", (panel), Enactive06, Grenoble, 2006

10. "Real-time Inhabited Virtual Worlds and Interaction: Illumination models for interactive, populated real-time virtual worlds", (tutorial), Eurographics06, Vienna, 2006

11. "State of the art in Real-time VR and AR systems", (tutorial), CGI04, Heraklion, 2004

Awards - Distinctions and Grants

1. NVIDIA Academic partnership, h/w research grants (January 2012, January 2016)

2. Euromed2014, Second-best paper award

3. Marie-Curie Intra-European Fellowship Award for Career Development (FP7-PEOPLE-2010-IEF), from the European Commission Research Executive Agency (April 2011)

4. PhD in Computer Science with Honours, University of Geneva (June 2006)

5. MSc in Advanced Computing with Honours, University of Bristol (October 1999)

Participation and Demonstrations of R&D results in Industrial venues, fairs and forums

1. September 2017, ovidVR Psychomotor surgical training simulator, Thessaloniki International Fair, Thessaloniki, Greece

2. January 2017, ovidVR Psychomotor surgical training simulator, INTEL Corporation, Hilsboro, USA

3. December 2016, ovidVR Psychomotor surgical training simulator, VRX'16 Conference, San Francisco, USA

4. October 2015, ITN-DCH AR character animation and rendering, demonstration for Council of Europe Ministers Meeting, Limassol, Cyprus

5. November 2013, HiFi-PRINTER, VR character animation interpolation demonstration in SIGGRAPH Asia, Hong Kong

6. November 2012, Real to Virtual rapid prototyping system for simulation and previsualization, Euromed2012

7. February 2008, Virtual Character simulation framework for cultural heritage, EPOCH Final Event Exhibition

8. November 2007, Mobile AR guide, VRST07 Exhibition

9. June 2006, "COMPUTEX", Computex'06 Exhibit, Taipei, Re-enacted AR scene simulation
10. March 2005, "FET Presence Research", IST-FET Exhibit, CeBIT'05 Exhibition, VR/AR character simulation
11. September 2004, Final LIFEPLUS demonstration in Pompeii, Final demonstration and press conference
12. May 2003, 1st LIFEPLUS demonstration in Pompeii, Technical integration demonstration

Reviewer for scientific journals and European public funding agencies

1. IEEE Transactions on Visualization and Computer Graphics
2. The Visual Computer, Springer-Nature
3. IEEE Transactions on Multimedia
4. IEEE Transactions on Learning Technologies
5. ACM Journal on Computing and Cultural Heritage
6. ACM Transactions on Embedded Computer Systems
7. Journal of Cultural Heritage, Elsevier
8. Computer Animation and Virtual worlds, Wiley
9. Computers & Graphics, Elsevier
10. Advances in Applied Clifford Algebras, Springer
11. Multimedia Tools and Applications, Springer
12. Frontiers in Robotics and AI, Frontiers
13. Journal of Information Processing Systems, KIPS
14. Sensors Journal, MDPI
15. *Agence Nationale de la Recherche - ANR (France)*
16. *IWT Agency for Innovation By Science And Technology (Belgium)*
17. *Research Promotion Foundation (Cyprus)*
18. *European Commission, External Reviewer, EC*

Programme committee member in international, per-reviewed conferences

1. *Conference Chair*: Computer Graphics International 2016, CGI2016
2. *Program Co-Chair*: HDRI Summer School 2013, GACSE 2016 (Co-located with CGI'16), ENGAGE 2017 (Co-located with CGI'17), ENGAGE 2018 (Co-located with CGI'18)
3. *Industry Chair:* Eurographics 2008
4. *Programme committee member:* EG VAST04, CGI04, EG VAST05, VSMM05, EG VAST06, CGI06, CASA06, VSMM07, CGI07, EG VAST07, IEEE ICAD07, IEEE Cyberworlds07, Eurographics08, CGI08, IEEE Cyberworlds08, CASA08, VSMM08, IEEE ETFA08, VSMM09, EUROMED10, CGI11, ReLIVE11, CGI12, VSMM12, EUROMED12, CGI13, ACM VRST13, CASA13, DIgitalHeritage13, CASA14, CGI2014, NVIDIA GPU Technology Workshop (GTW) 2014, Euromed12, IEEE VR2014, Euromed14, NVIDIA GTC Asia South 2015, CGI2015, DIgitalHeritage15, ACM VRST15, CASA2015, IEEE 3DUI2015, IEEE VR2015, CGI2016, Euromed16, CASA2016, IEEE VR2017, CASA2017, GACSE2016, CGI2017, ENGAGE2017, Euromed2018, CGI2018, ENGAGE2018, AGACSE2018

Editorial services

1. Europeana Task Force Group in Advanced documentation of 3D digital assets: *member*
2. Encyclopedia of Computer Graphics and Games, Springer Nature: *editorial board member*
3. Advances in Applied Clifford Algebras, Springer: *guest editor*
4. The Visual Computer, Springer: *associate editor*
5. Frontiers in Virtual Environments, Frontiers Media S.A.: *review editor*

6. Computer Animation and Virtual worlds, John Wiley and Sons Ltd: 2007 special issue, "Special Issue on Wireless and Mobile Technologies in Mixed Realities": *guest-editor*

7. Networked Media Task Force (EC DG INFSO) 2007 position paper: *rapporteur*, *co-editor*

Professional Memberships

1. *Board Member:* Computer Graphics Society (CGS)
2. *Member:* Institute of Electrical and Electronics Engineers (IEEE),
3. *Member:* IEEE Digital Senses Initiative
4. *Member:* Association for Computing Machinery (ACM),
5. *Member:* Special Interest Group on Graphics and Interactive Techniques (SIGGRAPH)
6. *Member:* Eurographics Association (EG)
7. *Member:* CORE-KEDEK (Centre for Orthopaedic & Regenerative Medicine Research - Aristotle University Centre for Interdisciplinary Research & Innovation)

Academic administrative services

- Computer Science Department Committees for Postgraduate studies & ERASMUS+
- Computer Science Department Committee for Undergraduate studies
- ELKE Research Committee of the University of Crete, Evaluation Committee member

Teaching & Student Supervision

- "*Computer Graphics*", Undergraduate Course CS-358, University of Crete,
  - Spring 2010, Winter 2011 till now every Winter semester
- "*Programming with C++*", Undergraduate Course CS-150, University of Crete,
  - Spring 2012, till now every Spring semester
- "*Interactive Computer Graphics*", Postgraduate Course CS-553, University of Crete,
  - Spring 2012, till now every Spring semester
- *"Simulating body and face"*, Postgraduate Course 4304045, University of Geneva, Spring 2007
- Graduate Student Supervision
  - Papaefthymiou, Margarita, Phd Thesis, University of Crete, on-going
  - Stratos Geronikolakis, MSc Thesis, University of Crete, on-going
  - Mike Kentros, MSc Thesis, University of Crete, on-going
  - Stauros Kateros, MSc Thesis, University of Crete, on-going
  - Stylianos Georgiou, MSc Thesis, University of Crete, on-going
  - Nikos Lydatakis, MSc Thesis, University of Crete, on-going
  - Vasilis Bachlitzanakis, MSc Thesis, University of Crete, on-going
  - Pavlos Zikas, MSc Thesis, University of Crete, on-going
  - Eva Mpaka, "*Retraining of fine movement of paretic hand through VR gaming, presence, musical rhythmical stimuli, based on cognitive feedback*", June 2017, MSc Thesis, University of Crete
  - Petros Papanikolaou, "*Physically principled character lighting and shading in real-time"*, June 2013, MSc Thesis, University of Crete
- PhD candidate Jury Member
  - Yvain Tisserand, *"Fast prototyping and deformation of virtual humans",* University of Geneva, 2018
  - Stavroula Ntoa, *"Uxami Framework: User Experience Evaluation In Ambient Intelligence Environments"*, University of Crete, 2017
  - Georgios Margetis, *"Inprinted framework: interacting with augmented physical printed matter in ambient intelligence environments"*, University of Crete, 2017

- o Markos Sigalas, *"Full-body pose tracking under severe occlusions - the Top View Reprojection approach"*, University of Crete, 2015
- o Nikolaos Kyriazis, *"Computational methods for observing and understanding the interaction of humans with objects of their environment"*, University of Crete, 2014
- o Andreas Vassilakis, *"Άμεση Απόδοση των Προσεγγιστικών Παραμορφώσεων Περιβλήματος Βασισμένες σε Χαρακτηριστικά"*, University of Ioannina, 2014
- o Alessandro Foni, *"Methodological Approaches for the Protection of Cultural Heritage in the Digital Age"*, University of Geneva, 2013
- o Patrick Salamin, *"Context Aware, Multimodal and Semantic Rendering Engine"*, Ecole Polytechnique Fédéral de Lausanne - EPFL, 2010

- MSc candidate Jury Member
  - o Maria-Evangelia Papadaki, "A 3D model for visualization the LOD cloud", University of Crete, 2017
  - o Chryssi Birliraki, *"Interaction with Three Dimensional Virtual Humans in Ambient Intelligence Environments"*, University of Crete, 2014
  - o Nikos Mouchtaris *"Automatic User-Interface Generation from Annotated APIs in a Dynamic Language"*, University of Crete, 2013
  - o Ioannis Drossis, *"TimeTunnel: Modeling and interactive information visualization using three dimensional timelines"*, University of Crete, 2012

- Graduate Student Co-Supervision
  - o Chryssi Birliraki, Interaction with expressive virtual characters, December 2011 – April 2012, FORTH
  - o Anastasia Pampouchidou, Interaction with Expressive Virtual Characters, January 2011 - June 2011, MSc Thesis, FORTH
  - o Silvina Ferradal, Integration of Facial/Body Communication in a Real-time Animation Framework, January – June 2005, Diploma Thesis, University of Geneva
  - o Bart Kevelham, Point-Light based Shadowing for virtual humans in Mixed Realities, June – December 2005, Diploma Thesis, University of Geneva
  - o Roman Meylan, Camera View-dependant Posture setup based on a COLLADA virtual human, May – July 2007, Diploma Thesis, University of Geneva
  - o Maryam Arasteh, Evaluation and Comparison of latest 2D/3D Web Technologies, August 2007 – January 2008, Diploma Thesis, University of Geneva

- Undergraduate Student Supervision (Final Year BSc Project, University of Crete)
  - o Papadakis, M., *A Mobile-VR, gamified synaesthesia simulation framework, on-going*
  - o Kanakis, M., *VR gamification based on open-source simulation toolkits,* January 2017
  - o Kentros, M., *VR gamification and BCI with the Emotiv EEG headset*, January 2017
  - o Geronikolakis, E., *Physically Based Rendering using all current GPU shader- based stages*, September 2016
  - o Bachlitzanakis, V., *Mobile VR cardboard rendering in glGA*, August 2016
  - o Zikas, P., *Interactive Crowd Simulation*, January 2016
  - o Lydatakis, N., *Real-time High Dynamic Range (HDR) shadowing for dynamic character simulation*, October 2015
  - o Kateros, S., *Comparison of HMD-Enabled VR frameworks for production and gamification of virtual characters,* October 2014
  - o Georgiou, S., *A Head Mounted Display VR framework for 3D&2D multimedia presentations,* October 2014
  - o Kampouris, S., *Life-size virtual characters in Augmented Reality*, February 2013
  - o Greassidou, E., *GPU Collada-based morph targets for facial animation,* February 2013
  - o Patsiouras, N., *Virtual Character Face and Body simulation dataset*, July 2012
  - o Kamileris, D., *Real-time shader-based per-fragment lighting for dynamic objects in WebGL*, July 2012

- Undergraduate Student Co-Supervision (BSc Final Year project, MIRALab, University of Geneva)
  - o Kevelham, B., *A real-time Effect GPU-based framework*, October 2004
  - o Raverdy, B., *Game programming based on scripted, unified VR/AR frameworks*, May 2003

Hellenic army service

- 523 Infantry battalion (Private, *'Fighter' distinction awarded*, November-December 2008)
- 645 Motorized Infantry battalion (Private, *Systems Administrator*, January-May 2009)

Media Coverage

Press articles on G. Papagiannakis's research contributions

1. "ovidVR disrupts surgical training and medical education by providing state of the art VR technology", *orthofeed.com,* May 2017
2. "More realistic virtual characters", *European Commission Cordis Information Service*, March 2015
3. "Πόσο 3D θα γίνει η ζωή μας;", *TO BHMA*, August 2010
4. "Une veste pour rester branché", *Le Matin Bleu*, October 2006
5. "FET Presence Research", *IST-FET Exhibit press report*, CeBIT05, March 2005
6. "Η Πομπηία ξαναζεί", *TA NEA*, December 2004
7. "Pompeii gets digital make over", *BBC News*, October 2004
8. "Passe recompose, L'air de Pompei avant la lave", *Tribune de Geneve*, September 2004
9. "Le Tourisme en 3D est ne", *Le Matin*, September 2004
10. "2D3 develops real-time camera tracking for EU augmented reality project", *2d3 press announcement*, September 2004
11. "Pompei se visite en trois dimensions", *Le Temps*, September 2004
12. "Virtual reality brings past to life", *BBC News*, February 2004
13. "Εικονικοί πρωταγωνιστές", *RAM Magazine*, issue 138, July-August 2000

Languages

1. English (fluent),
2. Greek (native language),
3. German (working knowledge),
4. French (working knowledge),
5. Language Diplomas: Cambridge First Certificate, Zertificat Deutsch als Fremdsprache

References

- Available upon request