Andreas-Alexandros Vasilakis **Computer Graphics R&D**

Personal Information	Born	12-10-1983, Corfu, Greece
	Address	43, Dim. Malagardi Str, Korydallos, Athens GR18120, Greece
	Mobile phone number	(+30) 6948594978
Contact Information	*Web*:	https://abasilak.github.io/
	E-mail:	andreas.alex.vasilakis@gmail.com
	LinkedIn, Skype, Twitter, GitHub:	abasilak

Education

The Ioannina University, Dept. of Computer Science & Engineering, Greece

PhD **Sep 2008 to Jan 2014**
Thesis title: *Direct Rendering of Feature-based Skinning Deformations*

Master (8.92/10.0) **Feb 2006 to Jul 2008**
Thesis title: *Robust Skeletal Animation of Articulated Modular Solid Objects*

Bachelor (7.22/10.0) **Sep 2001 to Feb 2006**
Thesis title: *3D Reconstruction of Objects using 2D Figures*

Industrial Experience

Think Silicon S.A., IT Company, Greece

Senior Software Engineer **Sep 2018 to Dec 2018**
Software Engineer **Nov 2017 to Aug 2018**

Research Project Experience

Athens University of Economics and Business, Dept. of Informatics, Greece

Postdoc Researcher **Mar 2020 to Jan 2022**
"*LumiBricks: Modular Illumination Transfer for Photorealistic Visualization on Commodity Hardware*"

Postdoc Researcher **Jun 2019 to Now**
"*Rayground.com: an online educational tool for rapid prototyping of ray tracing algorithms*"

Postdoc Researcher **Nov 2019 to Dec 2020**
"*Proof-of-concept implementation of coarse shading technologies for the ARM Mali-G76 Bifrost architecture*"

Postdoc Researcher **Mar 2019 to Oct 2019**
"*Big Data Visualization for Transaction Data*"

Think Silicon S.A., IT Company, Greece

Graphics Software Engineer **Nov 2017 to May 2018**
"*LPGPU2: Low-Power Parallel Computing on GPUs 2*"

Graphics Software Engineer **Jun 2018 to Nov 2018**
"*GPU-WEAR: Ultra-low power heterogeneous Graphics Processing Units for Wearable/IoT devices*"

Information Technologies Institute, Centre for Research & Technology Hellas

Postdoc Researcher **Feb 2016 to Oct 2017**
"*FRAILSAFE: Sensing and predictive treatment of frailty and associated co-morbidities using advanced personalized models and advanced interventions*"

Athens University of Economics and Business, Dept. of Informatics, Greece

Postdoc Researcher **Apr 2014 to Oct 2015**
"*GLIDE: Goal-driven Lighting for Dynamic 3D Environments*"

Postdoc Researcher **Nov 2015 to Jan 2016**
"*PRESIOUS - Predictive digitization, restoration and degradation assessment of cultural heritage objects*"

The Ioannina University, Dept. of Computer Science & Engineering, Greece

Postdoc Researcher **Mar 2014 to Mar 2014**
"*Epirus On Androids*"

Student Researcher **Jul 2008 to Aug 2008**
"*AEOLUS: Algorithmic Principles for Building Efficient Overlay Computers*"

Student Researcher **Oct 2007 to Dec 2007**
"*Georouting: Placing and Routing in VLSI using Geometric Constraints*"

University of Cyprus, Dept. of Computer Science, Cyprus

Visiting Student Researcher **Mar 2012 to Jun 2012**
"*LLP/ERASMUS practical training program on applied research in Computer Graphics*"

The Aegean University, Dept. of Prod. & Systems Design Engineering, Greece

Research Associate/Junior Developer **Feb 2009 to Oct 2009**
Dec 2007 to Mar 2008
"*A New Parametric CAD system for the Reconstruction of Traditional Jewellery*"

Journal Publications

I. Evangelou, G. Papaioannou, K. Vardis, **A. A. Vasilakis**, *Rasterization-based Progressive Photon Mapping*, The Visual Computer (Proceedings of CGI 2020), vol. x no. x, pages xxx-xxx, Oct, 2020.

A. A. Vasilakis, K. Vardis, G. Papaioannou, *A Survey of Multifragment Rendering*, Computer Graphics Forum, vol. 39 no. 2, pages 623-642, May, 2020. DOI: 10.1111/cgf.14019

N. Vitsas, G. Papaioannou, A. Gkaravelis and **A. A. Vasilakis**, *Illumination-Guided Furniture Layout Optimization*, Computer Graphics Forum (Proceedings of Eurographics 2020), vol. 39 no. 2, pages 291-301, May, 2020. DOI: 10.1111/cgf.13930

A. Lalos, **A. A. Vasilakis**, A. Dimas and K. Moustakas, *Adaptive Compression of Animated Meshes by Exploiting Orthogonal Iterations*, The Visual Computer (Proceedings of CGI 2017), Vol. 33, Issue 6, pages 811-821, 2017. DOI: 10.1007/s00371-017-1395-4

A. A. Vasilakis, G. Papaioannou and I. Fudos, *k^+-buffer: An efficient, memory-friendly and dynamic k-buffer framework*, IEEE Transactions on Visualization and Computer Graphics, vol. 21, no. 6, pages 688-700, June, 2015. DOI: 10.1109/TVCG.2015.2417581

A. A. Vasilakis and I. Fudos, *Pose Partitioning for Multi-resolution Segmentation of Arbitrary Mesh Animations*, Computer Graphics Forum (Proceedings of Eurographics 2014), vol. 33 no. 2, pages 293-302, April, 2014. DOI: 10.1111/cgf.12327

A. A. Vasilakis and I. Fudos, *Depth-fighting Aware Methods for Multifragment Rendering*, IEEE Transactions on Visualization and Computer Graphics, vol. 19, no. 6, pages 967-977, June, 2013. DOI: 10.1109/TVCG.2012.300

J. Rossignac, I. Fudos, and **A. A. Vasilakis**, *Direct Rendering of Boolean Combinations of Self-Trimmed Surfaces*, Computer-Aided Design, Volume 45, Issue 2, February 2013, pages 288-300, ISSN 0010-4485. DOI: 10.1016/j.cad.2012.10.012

A. A. Vasilakis and I. Fudos, *GPU Rigid Skinning using a Refined Skeletonization Method*, Computer Animation and Virtual Worlds, 22: 27-46, 2011. DOI: 10.1002/cav.382

Conference Publications

N. Vitsas, A. Gkaravelis, **A. A. Vasilakis**, K. Vardis, G. Papaioannou, *Rayground: An Online Educational Tool for Ray Tracing*, In Proceedings of the 41th Annual Conference of Eurographics (EG '20), Educational Papers, pages 01-08, Norrköping, Sweden. May 25-29, 2020. DOI: 10.2312/eged.20201027

A. A. Vasilakis, K. Vardis, G. Papaioannou and K. Moustakas, *Variable k-buffer using Importance Maps*, In Proceedings of the 38th Annual Conference of Eurographics (EG '17), Short Papers, pages 21-24, Lyon, France, April 24-28, 2017. DOI: 10.2312/egsh.20171005

A. A. Vasilakis, I. Fudos and G. Antonopoulos, *PPS: Pose-to-Pose Skinning of Animated Meshes*, In Proceedings of the 2016 Computer Graphics International Conference (CGI '16), Short Papers, pages 53-56, Heraklion, Crete, Greece, June 28-July 1, 2016. DOI: 10.1145/2949035.2949049

K. Vardis, **A. A. Vasilakis** and G. Papaioannou, *DIRT: Deferred Image-based Ray Tracing*, In Proceedings of the 8th Conference on High-Performance Graphics (HPG '16), pages 1-11, Dublin, Ireland, June 20-22, 2016. DOI: 10.2312/hpg.20161193

K. Vardis, **A. A. Vasilakis** and G. Papaioannou, *A Multiview and Multilayer Approach for Interactive Ray Tracing*, In Proceedings of 20th meeting of the ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (I3D '16), pages 171-178, Redmond, WA, USA, February 27-28, 2016. DOI: 10.1145/2856400.2856401

A. A. Vasilakis and G. Papaioannou, *Improving k-buffer methods via Occupancy Maps*, In Proceedings of the 36th Annual Conference of Eurographics (EG '15), Short Papers, pages 69-72, Zurich, Switzerland, May 4-8, 2015. DOI: 10.2312/egsh.20151017

A. A. Vasilakis and I. Fudos, *k^+-buffer: Fragment Synchronized k-buffer*, In Proceedings of the 18th meeting of the ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (I3D '14), pages 143-150, San Francisco, California, USA, March 14-16, 2014. DOI: 10.1145/2556700.2556702

A. A. Vasilakis and I. Fudos, *S-buffer: Sparsity-aware Multi-fragment Rendering*, In Proceedings of the 33rd Annual Conference of Eurographics (EG '12), Short Papers, pages 101-104, Cagliari, Italy, May 13-18, 2012. DOI: 10.2312/conf/EG2012/short/101-104

A. A. Vasilakis and I. Fudos, *Skeleton-based Rigid Skinning for Character Animation*, In Proceedings of the Forth International Conference on Computer Graphics Theory and Applications (GRAPP '09), pages 302-308, Lisbon, Portugal, February 5-8, 2009.

Poster Publications

A. A. Vasilakis and G. Papaioannou, *Accelerating k^+-buffer using efficient fragment culling*, ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games 2015 (Posters), pages 129-129, San Francisco, California, USA, February 27-March 01, 2015. DOI: 10.1145/2699276.2721402

E. Eftaxopoulos, **A. A. Vasilakis** and I. Fudos, *AR-TagBrowse: Annotating and Browsing 3D models on Mobile Devices*, Eurographics 2014 (Posters), Strasbourg, France, April 7-11, 2014.

A. A. Vasilakis and I. Fudos, *Z-fighting aware depth Peeling*, SIGGRAPH 2011 (Posters), Vancouver, Canada, August 7-11, 2011. DOI: 10.1145/2037715.2037801

A. A. Vasilakis, G. Antonopoulos and I. Fudos, *Pose-to-Pose Skinning of Animated Meshes*, ACM/Eurographics Symposium on Computer Animation (Posters), Vancouver, Canada, August 5-7, 2011.

Other Publications

S. Kalogiannis, K. Deltouzos, E. Zacharaki, **A. A. Vasilakis**, K. Moustakas, J. Ellul, V. Megalooikonomou, *Integrating an openEHR-based personalized virtual model for the ageing population within HBase*, BMC Medical Informatics and Decision Making 19: 25, 2019. DOI: 10.1186/s12911-019-0745-8

Technical Reports

A. A. Vasilakis, V. Vassalos, *Future Trends in Big Data Visualization Technology*, Feb 2020.

A. A. Vasilakis, V. Vassalos, *Report on Recent Information Visualization Research with Applications on Financial Data*, Oct 2019.

A. Gkaravelis, C. Kalampokis, G. Papaioannou, K. Vardis, **A. A. Vasilakis**, *STAR on Interactive Global Illumination Techniques and Inverse Lighting Problems*, GLIDE: Goal-driven Lighting for Dynamic 3D Environments, Deliverable 1.1, August 2014.

Presentations

EG '20, *A Survey of Multifragment Rendering*, Remote **May 2020**

CS.UOI, *Improving k-buffer methods via Occupancy Maps*, Ioannina, Greece **Feb 2015**

EG '14, *Pose Partitioning for Multi-resolution Segmentation of Arbitrary Mesh Animations*, Strasbourg, France **Apr 2014**

I3D '13, *Depth-fighting Aware Methods for Multi-fragment Rendering*, Orlando, USA . **Mar 2013**

CS.UCY, *Multi-fragment Rendering Solutions*, Nicosia, Cyprus **Mar 2012**

Reviewer

Computers & Graphics, JCGT, CGI, GRAPP, IEEE VIS

Research Interests

character deformation, animation compression, mesh segmentation, multi-fragment rendering, global illumination, image-based effects, virtual/augmented reality, machine learning.

Membership

Khronos Group, EG, ACM, ACM Greek SIGCHI, Hellenic Informatics Union

Scholarships

Athens University of Economics and Business, Dept. of Informatics, Greece

NSRF grant through the operational programme "Supporting researchers with emphasis on young researchers (Cycle B)" **2020 to 2021**

The Ioannina University, Dept. of Computer Science & Engineering, Greece

Heraclitus II grant through the operational programme "Education and Lifelong Learning" through the European Social Fund **2010 to 2013**

EPEAEK fund from the University of Ioannina **2006 to 2007**

Awards

ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games

My paper titled "k^+*-buffer: Fragment Synchronized k-buffer*" was among the **four best papers** in I3D'14 **Mar 2014**

ACM Stipend Grant **Mar 2013**

The Ioannina University, Dept. of Computer Science & Engineering, Greece

Highest graduate grade in my class **Mar 2006**

Academic Experience

Athens University of Economics and Business, Dept. of Informatics, Greece

Teaching
MSc in Digital Methods for the Humanities
"Interaction Design & Multimedia" **2020**

Teaching Assistant
Tutoring, creating/grading exercises, and invigilating exams for the undergraduate level courses on Computer Graphics (Xlib, OpenGL) **2008 to 2013**

PhD Co-Supervision (with Prof. G. Papaioannou)
K. Vardis, *Efficient Illumination Algorithms for Global Illumination in Interactive and Real-Time Rendering* **Dec 2016**

The Ioannina University, Dept. of Computer Science & Engineering, Greece

Master Co-Supervision (with Prof. I. Fudos)
K. Tziomakis, *Deformation Based Volume Preservation for Mesh Animation* **Jul 2012**
A. Lazos, *Deformation Transfer and Animation Editing* **Jan 2012**
G. Antonopoulos, *Fast Realistic Skinning of Highly Deformable Objects* **Nov 2010**

Bachelor Co-Supervision (with Prof. I. Fudos)
P. Savvidou, *Algorithms for normal correction of 3D meshes* **Nov 2011**

Languages

English (Fluent), Greek (Native)