



Andreas-Alexandros Vasilakis

JOB TITLE	Computer Graphics R&D	
PERSONAL INFORMATION	Born	12-10-1983, Corfu, Greece
	Address	43, Dim. Malagardi Str, Korydallos, Athens GR18120, Greece
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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 (Advisor: Professor Ioannis Fudos)	
	PhD	Sep 2008 to Jan 2014
	Thesis title: <i>Direct Rendering of Feature-based Skinning Deformations</i>	
	Master (8.92/10.0)	Feb 2006 to Jul 2008
	Thesis title: <i>Robust Skeletal Animation of Articulated Modular Solid Objects</i>	
	Bachelor (7.22/10.0)	Sep 2001 to Feb 2006
	Thesis title: <i>3D Reconstruction of Objects using 2D Figures</i>	
	2th Senior High School (18.2/20.0) , Corfu, Greece	Sep 1998 to July 2001
INDUSTRIAL EXPERIENCE	Think Silicon S.A. , IT Company, Greece	
	Senior Software Engineer	Sep 2018 to Dec 2018
	Software Engineer	Nov 2017 to Aug 2018
	Software design, development, build, testing, integration, monitor, documentation of graphics drivers and development kits for low-power graphics solutions. Participation at weekly OpenGL & Vulkan teleconferences and face-2-face meetings of Khronos Group; responsible for the evolution of these APIs. Technologies used: C, C++, EGL, OpenGL ES, Vulkan, Shell Scripting, CMake, Git, L ^A T _E X, Buildbot, Jenkins, Phabricator.	
RESEARCH PROJECT EXPERIENCE	Think Silicon S.A. , IT Company, Greece	
	Graphics Software Engineer	Nov 2017 to May 2018
	<i>“LPGPU2: Low-Power Parallel Computing on GPUs 2”</i>	
	Development of software development kit for creating power-aware, high-performance software applications for Wearable, IoT, and Embedded display devices. Technologies used: C, C++, OpenGL ES, ESSL, CMake, Git, L ^A T _E X.	
	Graphics Software Engineer	Jun 2018 to Nov 2018
	<i>“GPU-WEAR: Ultra-low power heterogeneous Graphics Processing Units for Wearable/IoT devices”</i>	

Software architecture design and development of *GLOVE*; an open-source cross-platform software library that translates at runtime OpenGL ES API calls to Vulkan API commands. Technologies used: C, C++, EGL, OpenGL ES, Vulkan, ESSL, SPIR-V, Git, GitHub.

Information Technologies Institute, Centre for Research & Technology Hellas, Greece

Postdoc Researcher

Feb 2016 to Oct 2017

“FRILLSAFE: Sensing and predictive treatment of frailty and associated co-morbidities using advanced personalized models and advanced interventions”

I was mainly responsible for the coordination of the first work package of the FrailSafe project. Among others (e.g. serious games design and content creation & interactive geovisualizations), I developed high-performance multi-fragment rendering solutions for mobile and VR/AR devices.

Technologies used: Augmented Reality, Android, Java, OpenGL ES, Processing, Game Design, Blender, Trello, Slack.

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

Postdoc Researcher

Apr 2014 to Jan 2016

“GLIDE: Goal-driven Lighting for Dynamic 3D Environments”

Research and development of high-performance multifragment rendering methods with applications on global illumination and image-based techniques.

Technologies used: C++/C#, OpenGL, Optix, TortoiseSVN, L^AT_EX.

“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”

I was responsible for dissemination, communication, community building and exploitation aspects of the project.

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

“Methods development for point cloud decomposition based on 3D Jewellery applications”
 I was responsible for the implementation of advanced 3D mesh segmentation algorithms.
 Technologies used: C++, OpenGL, OpenMP.

Research Associate/Junior Developer

Dec 2007 to Mar 2008

“ByzantineCAD: CAD/CAM Methods for Reproducing Byzantine Jewellery”

I have been involved in the development of a point cloud rendering system for 3D CAD models. Especially, I worked on porting the triangulation and normal estimation procedures on the GPU.

Technologies used: C++, OpenGL.

JOURNAL PUBLICATIONS

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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/10.1002/cav.382)

CONFERENCE PUBLICATIONS

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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/10.1186/s12911-019-0745-8)

TECHNICAL
REPORTS

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

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

Eurographics '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

RESEARCH
INTERESTS

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

MEMBERSHIP

Khronos Group, ACM, EG

SCHOLARSHIPS

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	
	PhD Co-Supervision (with Professor Georgios Papaioannou)	
	K. Vardis, <i>Efficient Illumination Algorithms for Global Illumination in Interactive and Real-Time Rendering</i>	Dec 2016
	The Ioannina University, Dept. of Computer Science & Engineering , Greece	
	Master Co-Supervision (with Professor Ioannis Fudos)	
	K. Tziomakis, <i>Deformation Based Volume Preservation for Mesh Animation</i>	Jul 2012
	A. Lazos, <i>Deformation Transfer and Animation Editing</i>	Jan 2012
	G. Antonopoulos, <i>Fast Realistic Skinning of Highly Deformable Objects</i>	Nov 2010
	Bachelor Co-Supervision (with Professor Ioannis Fudos)	
	P. Savvidou, <i>Algorithms for normal correction of 3D meshes</i>	Nov 2011
	Teaching Assistant	
	Tutoring, creating/grading exercises, and invigilating exams for the undergraduate level courses on Computer Graphics (Xlib, OpenGL)	2008 to 2013
TECHNICAL SKILLS	Programming Languages: C, C++, C# Graphics APIs: Vulkan, OpenGL (ES), GLSL, Optix, WebGL Multimedia Tools: Blender and Adobe Photoshop, Illustrator, Premiere Experience developing: <ul style="list-style-type: none"> • real-time and offline rendering systems. • high and low-level code optimizations. Secondary Skills: Android, Java, Python, OpenCL, OpenMP, Processing, HTML/CSS, L ^A T _E X, GitHub	
LANGUAGES	English (Fluent), Greek (Native)	
PERSONAL INTERESTS	Sports & Fitness Activities: Running, Bicycling, Basketball, Soccer Games: Chess, Video Games, Card Games Reading: Books, Comics	
MILITARY SERVICE	Greek Army	May 2014 to Feb 2015