Andreas-Alexandros Vasilakis

Personal Information	Born	12-10-1983, Corfu, Greece
	Address	Leof. Kifisias 108, GR11526, Ampelokipoi, Athens, Greece
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Contact Information	Virtual and Augmented Reality Group	*Web*: http://www.iti.gr/ abasilak
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Education

The Ioannina University, Dept. of Computer Science & Engineering, Greece
(Advisor: Professor Ioannis Fudos)

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

Master (8.92/10.0) **Feb 2006 to July 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*

2^{th} **Senior High School** (18.2/20.0), Corfu, Greece **Sep 1998 to July 2001**

Professional Experience

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

Postdoc Researcher **Feb 2016 to Present**

"*FRAILSAFE: Sensing and predictive treatment of frailty and associated co-morbidities using advanced personalized models and advanced interventions*"

I am mainly responsible for the coordination of the first work package of the FrailSafe project. Among others (e.g. virtual patient modeling), I am trying to develop high-performance multi-fragment rendering solutions for mobile and VR/AR devices.
Techologies used: openEHR, OpenGL ES, Augmented Reality.

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.
Techologies used: C++/C#, OpenGL, Optix, Subversion, LaTeX.

"*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 **Oct 2013 to Mar 2014**

"*CA.V.E.: Caves Virtual Environment*"

I was responsible for the 3D digitization of delicate cultural heritage objects available from Perama's Cave museum. This task included the digital recording via a 3D handhold laser scanner as well as the data processing of the digitized object, which involves the geometric & texture data processing (repairing/fairing & creation/mapping).
Techologies used: Creaform Handyscan 3D Scanner, MeshLab, Geomagic Studio.

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

Reseach 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.
Techologies used: C++, OpenGL, OpenMP.

Reseach 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.
Techologies used: C++, OpenGL.

Journal Publications

A. Lalos, **A. A. Vasilakis**, A. Dimas and K. Moustakas, *Adaptive Compression of Animated Meshes by Exploiting Orthogonal Iterations*, Visual Computer (Proceedings of CGI 2017), pages 1-10, June, 2017.

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.

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.

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.

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.

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

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 1-4, Lyon, France, April 24-28, 2017.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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, augmented reality.

MEMBERSHIP

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, *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 Professor Ioannis 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 Professor Ioannis Fudos)

P. Savvidou, *Algorithms for normal correction of 3D meshes* **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++ **Graphics APIs:** OpenGL, GLSL, Optix **Multimedia Tools:** Blender, Adobe Photoshop, Adobe Illustrator, Adobe Premiere **Experience developing:** • high and low-level code optimizations. • parallel applications with multithreading and GPU compute. • real-time and offline rendering systems. **Secondary Skills:** C#, Python, OpenCL, OpenMP, Processing, HTML/CSS, LaTeX
Languages	English (Fluent), Greek (Native)
Personal Interests	**Sports & Fitness Activities:** Running, Bicycling, Basketball, Soccer **Games:** Chess, Video Games, Card Games
Military Service	Greek Army **May 2014 to Feb 2015**