## Andreas-Alexandros Vasilakis

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|---|---|---|
| Job Title | 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 2019 to Present**

**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 Okt 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

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

**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. 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, EG, ACM, ACM Greek SIGCHI, Hellenic Informatics Union

## 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 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**

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

## Languages

English (Fluent), Greek (Native)