

CONTACT INFORMATION	CYENS Centre of Excellence Dimarchias Square 23 Nicosia 1016 Cyprus	Email: <a href="mailto:m.averkiou@cyens.org.cy">m.averkiou@cyens.org.cy</a> Phone: +357-99887483 Web: <a href="https://melinos.github.io">https://melinos.github.io</a> Google Scholar Profile: <a href="https://goo.gl/iXtTsn">https://goo.gl/iXtTsn</a>
RESEARCH INTERESTS	My research lies at the intersection of computer vision, machine learning, and computer graphics, focusing on data-driven methods for discovering semantics from 3D and 2D data. I am particularly interested in deep neural network architectures for acquiring, modelling, and understanding the semantics of real-world environments at multiple scales, ranging from objects, scenes, buildings, and ultimately entire cities. This knowledge enables intelligent tools for scene understanding which have important applications in engineering, robotics, autonomous navigation, health, and extended reality.	
EDUCATION	<b>University College London</b> , London, UK	10/2011 – 10/2015
	Department of Computer Science <i>PhD in Computer Science</i> Thesis: Data-driven Modelling of Shape Structure Advisor: Prof. Niloy Mitra	
	<b>Stanford University</b> , Palo Alto, USA	08/2014 – 09/2014
	Geometric Computing Group <i>Visiting PhD student</i> Advisors: Prof. Leonidas Guibas & Dr Vladimir Kim	
	<b>University of Cambridge</b> , Cambridge, UK	10/2009 – 10/2010
PROFESSIONAL EXPERIENCE	Computer Laboratory <i>MPhil in Advanced Computer Science</i> (GPA: 75/100) Thesis: 3D Interfaces for 3D Modelling Advisor: Prof. Neil Dodgson	
	<b>University of Cyprus</b> , Nicosia, Cyprus	09/2005 – 06/2009
	Department of Computer Science <i>BSc in Computer Science</i> (GPA: 9.3/10), <b>summa cum laude - top of the class</b> Thesis: A multi-touch interface for 3D navigation inside the virtual world of a museum exhibit Advisor: Prof. Yiorgos Chrysanthou	
	<b>CYENS Centre of Excellence</b> , Nicosia, Cyprus	07/2019 – present
	<a href="#">Visual Computing Group (VCG)</a> <i>Research Group Leader</i> Leading a team of researchers working on deep neural networks for the acquisition and semantic understanding of real environments at multiple scales, ranging from simple objects to entire cities.	
	<b>University of Cyprus</b> , Nicosia, Cyprus	10/2018 – present
	Department of Computer Science <i>Senior Research Scientist</i>	

Principal investigator for the [ANNFASS project](#), funded by the Cyprus Research Promotion Foundation with €250k. The aim of ANNFASS was to develop deep neural networks for segmenting historical buildings into semantic parts and understanding their architectural style.

Course instructor for Computer Vision (CS447), Deep Learning (DSC515 - upcoming), Computer Games Engineering (CS653).

**University of Cyprus**, Nicosia, Cyprus

10/2015 – 09/2018

Department of Computer Science

*Research Scientist*

Research on deep learning for 3D geometric data, funded by a UCY Post-Doctoral Fellowship with ~ €44k. Results were published in CVPR 2017, the top computer vision conference (295 citations to date).

Course instructor for Visual Computing (CS607), Computer Games Engineering (CS653), Programming Problem Solving Methods (CS032).

**Shenzhen Institutes of Advanced Technology**, Shenzhen, China

10/2015 & 01/2016

Visual Computing Research Center

*Visiting Research Scientist*

Research on feature learning methods for locating style-defining shape elements, published in ACM Transactions on Graphics, the top computer graphics journal (impact factor 5.414).

**University College London**, London, UK

09/2012 – 12/2013

Department of Computer Science

*Teaching Assistant*

Prepared and delivered lab tutorials and marked coursework for Image Processing (GV12).

**A.R.M.E.S Ltd**, Nicosia, Cyprus

08/2010 – 09/2011

*Research Engineer*

Developed augmented reality solutions using a proprietary marker tracker and Qualcomm SDK for mobile and desktop applications.

**University of Cyprus**, Nicosia, Cyprus

12/2008 – 09/2009

Department of Electrical and Computer Engineering

*Research Intern* (advisors: Prof. Christoforos Hadjicostis & Dr. George Hadjichristofi)

Developed simulations for testing reliability issues related to the Cache and Forward network architecture for wireless nodes.

**University of Cyprus**, Nicosia, Cyprus

12/2007 – 09/2009

Department of Computer Science

*Research Intern* (advisor: Prof. Yiorgos Chrysanthou)

Developed an interactive web-based virtual tour for the Byzantine Museum. Created a multi-touch exhibit and part of a virtual tour of 19th century Nicosia, both for the Leventis Municipal Museum.

**University of Cyprus**, Nicosia, Cyprus

06/2008 – 09/2008

KIOS Research Center

*Research Intern* (advisor: Prof. George Ellinas)

Developed simulations for testing the MPLS network protocol.

**IBM Cyprus**, Nicosia, Cyprus

06/2007 – 09/2007

*Summer Intern*

Helped in the setup of the network for Nicosia and Famagusta General Hospitals.

GRANTS	• HORIZON <i>CL2-2021-HERITAGE-01-04</i> Grant – €600.000	2022 – present
	Co-principal Investigator	
	• CYENS Centre of Excellence Internal Research Grant – €50.000	2022 – present
	Principal Investigator	
	• Cyprus Research & Innovation Foundation <i>PRE-SEED</i> Grant – €100.000	2021 – present
	Principal Investigator	
	• CYENS Centre of Excellence Starting Grant – €187.000	2019 – present
	Principal Investigator	
	• Cyprus Research & Innovation Foundation <i>EXCELLENCE</i> Grant – €250.000	2018 – 2021
	Project Coordinator	
	• NVIDIA GPU Grant – €2.500 & €1.500	2017 & 2018
	Principal Investigator	
FELLOWSHIPS & SCHOLARSHIPS	• University of Cyprus Post-Doctoral Fellowship – €43.600	2016 – 2018
	• University College London Studentship Award (Funded by EPSRC) – £86.000	2011 – 2015
	• Rabin Ezra Scholarship Trust Bursary – £5.000	2014
	• Cyprus State Scholarship Foundation PhD Scholarship – €15.000	2011 – 2014
	• A.G. Leventis Foundation – PhD Scholarship £5.000	2011 – 2012
	• University of Cambridge Studentship Award (Funded by EPSRC) – £15.500	2009 – 2010
	• Cyprus State Scholarship Foundation MSc Scholarship – €5.000	2009 – 2010
	• A.G. Leventis Foundation MSc Scholarship – £5.000	2009 – 2010
HONORS & AWARDS	• Darwin College Cambridge Bursary – £1.000	2009
	• British Computer Society Distinguished Dissertation Competition, nominated	2016
	• Eurographics Award for Best PhD Thesis, nominated – short-listed	2016
	• Eurographics Best Paper Award, 2nd prize	2014
	• Cyprus RIF <i>Students in Research</i> Competition, 1st prize – €3.500	2010
	• Youth Board of Cyprus Postgraduate Award – €1.700	2009
	• Cyprus RIF <i>Students in Research</i> Competition, 2nd prize – €3.400	2009
	• Highest GPA in Univ. of Cyprus Computer Science Dept. (three awards) – €3.400	2009

TEACHING EXPERIENCE	<b>University of Cyprus</b> , Nicosia, Cyprus	
	Department of Computer Science	
	<i>Instructor for the following courses:</i>	
	• DSC515 – Deep Learning	Fall 2022 (upcoming)
	• CS447 – Computer Vision	Spring 2021–2022
	• CS653 – Computer Games Software Engineering	Spring 2016–2019
	• Computer Games Summer School	Summer 2016
	• CS607 – Visual Computing	Fall 2015
	• CS032 – Programming Problem Solving Methods	Fall 2015
	<b>University College London</b> , London, UK	
	Department of Computer Science	
	<i>Teaching Assistant</i> for Image Processing (GV12) course	Fall 2012–2013
SUPERVISION	<b>PhD Students</b>	
	• Yeshwanth Kumar	2021 – present
	• Yiangos Georgiou	2020 – present
	• Marios Loizou	2018 – present
	<b>MSc Students</b>	
	• Maria Maslioukova	2021 (distinction)
	• Kyriakos Zantis	2019 (distinction)
	• Sergios Stamatis	2018 (distinction)
	<b>BSc Students</b>	
	• Andreas Mylidonis	2021
	• Stephanos Kyriakides	2018
	• Christos Othonos	2017 (distinction)
PROFESSIONAL ACTIVITIES	<b>Program Committee Member</b>	
	• ECCV Workshop on Structural and Compositional Learning on 3D Data	2022
	• Shape Modeling International	2018–2022
	• International Symposium on Visual Computing	2018–2022
	• Computer Graphics International	2018–2019
	• WSCG Conference on Computer Graphics, Visualization and Computer Vision	2017
	• IEEE Melecon	2016
	• SIGGRAPH Asia Workshop on Creative Shape Modeling and Design	2014
	<b>Reviewer in International Journals</b>	
	ACM Transactions on Graphics, Computer Graphics Forum, IEEE Transactions on Visualization and Computer Graphics, Computers and Graphics, Graphical Models, Computer Graphics and Applications, Knowledge-Based Systems	

## Reviewer in International Conferences

CVPR, ICCV, ECCV, SIGGRAPH, SIGGRAPH Asia, Eurographics, Pacific Graphics, Computer Graphics International, Shape Modeling International, International Symposium on Visual Computing

ADMINISTRATION	<b>CYENS Centre of Excellence</b> , Nicosia, Cyprus	
DUTIES	• AI Cluster Tender Committee – Chair	2021–present
	• Doctoral Training Program Committee – Chair	2020–present
	• Scientific Council – Member	2019–present
JOURNAL PUBLICATIONS	<p>[J1] Deligiorgi, M., Maslioukova, M.I., <b>Averkiou, M.</b>, Andreou, A.C., Zavou, C. 2022. An Artificial Neural Network Framework for annotating, classifying, and indexing Architectural Structure and Style of Built Heritage in 3D. <i>International Journal of Architectural Computing</i> (under review).</p> <p>[J2] Deligiorgi, M., Maslioukova, M.I., <b>Averkiou, M.</b>, Andreou, A.C., Selvaraju, P., Kalogerakis, E., Patow, G., Chrysanthou, Y. and Artopoulos, G., 2021. A 3D digitisation workflow for architecture-specific annotation of built heritage. <i>Journal of Archaeological Science: Reports</i>, 37, p.102787. (<a href="#">project website</a>)</p> <p>[J3] Loizou, M., <b>Averkiou, M.</b>, Kalogerakis, E. 2020. Learning Part Boundaries from 3D Point Clouds. <i>Computer Graphics Forum</i> 39, 5, 183–195. (also presented in SGP 2020) (<a href="#">project website</a>)</p> <p>[J4] Hu, R., Li, W., van Kaick, O., Huang, H., <b>Averkiou, M.</b>, Cohen-Or, D., Zhang, H. 2017. Co-Locating Style-Defining Elements on 3D Shapes. <i>ACM Transactions on Graphics</i> 36, 3, 33:1–33:15. (also presented in <i>SIGGRAPH 2017</i>) [acceptance rate: 28%] (<a href="#">project website</a>)</p> <p>[J5] <b>Averkiou, M.</b>, Kim, V.G., Mitra, N.J. 2016. Autocorrelation Descriptor for Efficient Co-alignment of 3D Shape Collections. <i>Computer Graphics Forum</i> 35, 1, 261–271. (also presented in <i>Eurographics 2016</i>) (<a href="#">project website</a>)</p> <p>[J6] Fish, N.*, <b>Averkiou, M.*</b>, van Kaick, O., Sorkine-Hornung, O., Cohen-Or, D., Mitra, N. J. 2014. Meta-representation of Shape Families. <i>ACM Transactions on Graphics</i> 33, 4, 34:1-34:11. *joint first authors. (also presented in <i>SIGGRAPH 2014</i>) [acceptance rate: 25%] (<a href="#">project website</a>)</p> <p>[J7] <b>Averkiou, M.</b>, Kim, V.G., Zheng, Y., Mitra, N.J. 2014. ShapeSynth: Parameterizing Model Collections for Coupled Shape Exploration and Synthesis. <i>Computer Graphics Forum</i> 33, 2, 125–134. (also presented in <i>Eurographics 2014</i>) [acceptance rate: 25%] (<a href="#">project website</a>)</p> <p>[J8] Zheng, Y., Cohen-Or, D., <b>Averkiou, M.</b>, Mitra, N.J. 2014. Recurring Part Arrangements in Shape Collections. <i>Computer Graphics Forum</i> 33, 2, 115-124. (also presented in <i>Eurographics 2014</i>) [acceptance rate: 25%] <b>Best Paper Award, 2nd prize</b> (<a href="#">project website</a>)</p>	
CONFERENCE PUBLICATIONS	<p>[C1] Georgiou, Y., <b>Averkiou, M.</b>, Kelly, T. Kalogerakis, E. 2021. Projective Urban Texturing. In <i>Proceedings of International Conference on 3D Vision (3DV)</i>, 1034–1043. (<a href="#">project website</a>)</p> <p>[C2] Selvaraju, P., Nabail, M., Loizou, M., Maslioukova, M., <b>Averkiou, M.</b>, Andreou, A., Chaud-</p>	

huri, S., Kalogerakis, E. 2021. BuildingNet: Learning to Label 3D Buildings. In *Proceedings of IEEE/CVF International Conference on Computer Vision (ICCV)*, 10377–10387. **Oral Paper** [acceptance rate for oral papers: 3%] ([project website](#))

[C3] Lin, H., **Averkiou, M.**, Kalogerakis, E., Kovacs, B., Ranade, S., Kim, V. G., Chaudhuri, S., Bala, K. 2018. Learning Material-Aware Local Descriptors for 3D Shapes. In *Proceedings of International Conference on 3D Vision (3DV)*, 150–159.

[C4] Kalogerakis, E., **Averkiou, M.**, Maji, S., Chaudhuri, S. 2017. 3D Shape Segmentation with Projective Convolutional Networks. In *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 3779–3788. **Oral Paper** [acceptance rate for oral papers: 2.65%] ([project website](#))

[C5] Zheng, S., Prisacariu, V. A., **Averkiou, M.**, Cheng, M. M., Mitra, N. J., Shotton, J., Torr, P.H.S., Rother, C. 2015. Object Proposals Estimation in Depth Image Using Compact 3D Shape Manifolds. In *Lecture Notes in Computer Science, vol 9358 – Proceedings of German Conference on Pattern Recognition (GCPR)*, 196–208 ([project website](#))

[C6] **Averkiou, M.**, Mitra, N.J. 2012. Automatic Alignment of Shape Collections. In *Proceedings of Eurographics 2012 - Posters Track*

[C7] **Averkiou, M.**, Dodgson, N. 2011. Comparison of relative (mouse-like) and absolute (tablet-like) interaction with a large stereoscopic work-space. In *Proceedings of the Stereoscopes Displays and Applications XXII Conference*

[C8] **Averkiou, M.**, Chrysanthou, Y. 2009. Evaluating a multi-touch interface for 3D navigation inside the virtual world of a museum exhibit. In *Proceedings of the 10th VAST International Symposium on Virtual Reality, Archaeology and Cultural Heritage*

[C9] Kunkel, T., **Averkiou, M.**, Chrysanthou, Y. 2008. A web-based virtual museum application. In *Proceedings of the 14th International Conference on Virtual Systems and Multimedia*

#### THESES & TECHNICAL REPORTS

[T1] **Averkiou, M.** 2015. Data-driven Modelling of Shape Structure. *University College London*

[T2] **Averkiou, M.** 2010. 3D Interfaces for 3D Modelling. *University of Cambridge*

[T3] **Averkiou, M.** 2010. Digital Watermarking. *University of Cambridge*

[T4] **Averkiou, M.** 2009. A multi-touch interface for 3D navigation inside the virtual world of a museum exhibit. *University of Cyprus*

#### TALKS & PRESENTATIONS

- Eurographics 04/2014, 05/2016
- Shenzhen Institutes of Advanced Technology (invited) 10/2015
- Stanford Geometric Computing Group (invited) 09/2014
- SIGGRAPH 08/2014

CITATIONS      Source: **Google Scholar** (March 2022)  
**622** citations have been recorded to the above publications  
**h-index = 8**  
**i-10 index = 8**

COMPUTING      Programming languages: C++, Matlab and Python  
SKILLS      Programming libraries: OpenCV, OpenGL, numpy, scipy  
Deep learning frameworks: PyTorch, Tensorflow