

CONTACT	CYENS Centre of Excellence	Email: m.averkiou@cyens.org.cy
INFORMATION	Dimarchias Square 23 Nicosia 1016 Cyprus	Phone: +357-99887483 Web: https://melinos.github.io Google Scholar Profile: https://goo.gl/iXtTsn
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 with important applications in engineering, artificial intelligence, robotics, and extended reality.	
EDUCATION	University College London , 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	
	Stanford University , Palo Alto, USA	08/2014 – 09/2014
	Geometric Computing Group <i>Visiting PhD student</i> Advisors: Prof. Leonidas Guibas & Dr Vladimir Kim	
	University of Cambridge , Cambridge, UK	10/2009 – 10/2010
	Computer Laboratory <i>MPhil in Advanced Computer Science</i> (GPA: 75/100) Thesis: 3D Interfaces for 3D Modelling Advisor: Prof. Neil Dodgson	
	University of Cyprus , Nicosia, Cyprus	09/2005 – 06/2009
	Department of Computer Science <i>BSc in Computer Science</i> (GPA: 9.3/10), summa cum laude - top of the class Thesis: A multi-touch interface for 3D navigation inside the virtual world of a museum exhibit Advisor: Prof. Yiorgos Chrysanthou	
PROFESSIONAL EXPERIENCE	CYENS Centre of Excellence , Nicosia, Cyprus	07/2019 – present
	Visual Computing Group (VCG) <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.	
	University of Cyprus , 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 Foun-	

dition 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
	• Darwin College Cambridge Bursary – £1.000	2009
HONORS & AWARDS	• 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	University of Cyprus , Nicosia, Cyprus	
EXPERIENCE	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
	University College London , London, UK	
	Department of Computer Science	
	<i>Teaching Assistant</i> for Image Processing (GV12) course	Fall 2012–2013
SUPERVISION	PhD Students	
	• Yeshwanth Kumar	2021 – present
	• Yiangos Georgiou	2020 – present
	• Marios Loizou	2018 – present
	MSc Students	
	• Maria Maslioukova	2021 (distinction)
	• Kyriakos Zantis	2019 (distinction)
	• Sergios Stamatis	2018 (distinction)
	BSc Students	
	• Andreas Mylidonis	2021
	• Stephanos Kyriakides	2018
	• Christos Othonos	2017 (distinction)
PROFESSIONAL	Program Committee Member	
ACTIVITIES	• 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
	Reviewer in International Journals	
	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	CYENS Centre of Excellence , Nicosia, Cyprus
DUTIES	<ul style="list-style-type: none">• AI Cluster Tender Committee – Chair 2021–present• Doctoral Training Program Committee – Chair 2020–present• Scientific Council – Member 2019–present
JOURNAL PUBLICATIONS	<p>[J1] Artopoulos, G., Maslioukova, M.I., Zavou, C., Averkiou, M., Andreou, A.C., Deligiorgi, M. 2022. An Artificial Neural Network Framework for annotating and classifying Architectural Structure and Style of Built Heritage in 3D. <i>International Journal of Architectural Computing</i>. (under review) (project website)</p> <p>[J2] Deligiorgi, M., Maslioukova, M.I., Averkiou, M., 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. (project website)</p> <p>[J3] Loizou, M., Averkiou, M., Kalogerakis, E. 2020. Learning Part Boundaries from 3D Point Clouds. <i>Computer Graphics Forum</i> 39, 5, 183–195. (also presented in <i>SGP 2020</i> - acceptance rate: 36%) (project website)</p> <p>[J4] Hu, R., Li, W., van Kaick, O., Huang, H., Averkiou, M., 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%) (project website)</p> <p>[J5] Averkiou, M., 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>) (project website)</p> <p>[J6] Fish, N.*, Averkiou, M.*, 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%) (project website)</p> <p>[J7] Averkiou, M., 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%) (project website)</p> <p>[J8] Zheng, Y., Cohen-Or, D., Averkiou, M., 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% - Best Paper Award, 2nd prize) (project website)</p>
CONFERENCE PUBLICATIONS	[C1] Georgiou, Y., Averkiou, M. , Kelly, T. Kalogerakis, E. 2021. Projective Urban Texturing. In <i>Proceedings of International Conference on 3D Vision (3DV)</i> , 1034–1043. (project website)

[C2] Selvaraju, P., Nabail, M., Loizou, M., Maslioukova, M., **Averkiou, M.**, Andreou, A., Chaudhuri, 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 Stereoscopic 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*.

WORKING
PAPERS

[W1] Loizou, M., Petrov, D., **Averkiou, M.**, Kalogerakis, E. 2022. Cross-Shape Graph Convolutional Networks. *To be submitted to SIGGRAPH Asia 2022, preprint available on [arxiv](#)*.

[W2] Loizou, M., **Averkiou, M.**, Chaudhuri, S., Kalogerakis, E. 2022. BuildingNet: Learning to Label 3D Buildings. *To be submitted to Transactions on Pattern Analysis and Machine Intelligence*. ([project website](#))

[W3] Zavou, C., **Averkiou, M.** 2022. Style-based analysis of building monuments. *To be submitted to GCH 2022*.

[W4] Georgiou, Y., **Averkiou, M.**, Kelly, T., Kalogerakis, E. 2023. Controllable image synthesis via diffusion models. *To be submitted to CVPR 2023*.

[W5] Kumar, Y., **Averkiou, M.**, Poullis, C., 2023. Semantic segmentation for satellite data. *To be submitted to CVPR 2023.*

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