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| CONTACT INFORMATION | <p>CYENS Centre of Excellence</p> <p>Dimarchias Square 23</p> <p>Nicosia 1016</p> <p>Cyprus</p> | <p>Email: m.averkiou@cyens.org.cy</p> <p>Phone: +357-99887483</p> <p>Web: https://melinos.github.io</p> <p>Google Scholar Profile: https://goo.gl/iXtTsn</p> |
| RESEARCH INTERESTS | <p>My research lies at the intersection of computer vision, machine learning, and computer graphics, focusing on machine learning 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.</p> | |
| EDUCATION | <p>University College London, London, UK</p> <p>Department of Computer Science</p> <p><i>PhD in Computer Science</i></p> <p>Thesis: Data-driven Modelling of Shape Structure</p> <p>Advisor: Prof. Niloy Mitra</p> <p>10/2011 – 10/2015</p> | |
| | <p>Stanford University, Palo Alto, USA</p> <p>Geometric Computing Group</p> <p><i>Visiting PhD student</i></p> <p>Advisors: Prof. Leonidas Guibas & Dr Vladimir Kim</p> <p>08/2014 – 09/2014</p> | |
| | <p>University of Cambridge, Cambridge, UK</p> <p>Computer Laboratory</p> <p><i>MPhil in Advanced Computer Science</i> (GPA: 75/100)</p> <p>Thesis: 3D Interfaces for 3D Modelling</p> <p>Advisor: Prof. Neil Dodgson</p> <p>10/2009 – 10/2010</p> | |
| | <p>University of Cyprus, Nicosia, Cyprus</p> <p>Department of Computer Science</p> <p><i>BSc in Computer Science</i> (GPA: 9.3/10), summa cum laude - top of the class</p> <p>Thesis: A multi-touch interface for 3D navigation inside the virtual world of a museum exhibit</p> <p>Advisor: Prof. Yiorgos Chrysanthou</p> <p>09/2005 – 06/2009</p> | |
| PROFESSIONAL EXPERIENCE | <p>CYENS Centre of Excellence, Nicosia, Cyprus</p> <p>Visual Computing Group (VCG)</p> <p><i>Research Group Leader</i></p> <p>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.</p> <p>07/2019 – present</p> | |
| | <p>University of Cyprus, Nicosia, Cyprus</p> <p>Department of Computer Science</p> <p><i>Senior Research Scientist</i></p> <p>Principal investigator for the ANNFASS project, funded by the Cyprus Research Promotion Foun-</p> <p>10/2018 – present</p> | |

dation 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), 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).

GRANTS

- HORIZON *CL2-2021-HERITAGE-01-04* 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 *PRE-SEED* Grant – €100.000 2021 – present
Principal Investigator
- CYENS Centre of Excellence Starting Grant – €190.000 2019 – present
Principal Investigator
- Cyprus Research & Innovation Foundation *EXCELLENCE* 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 – €44.000 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

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| | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 | <p>University of Cyprus, Nicosia, Cyprus</p> <p>Department of Computer Science</p> <p><i>Instructor for the following courses:</i></p> <ul style="list-style-type: none"> • DSC515 – Deep Learning Fall 2022 • 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 <p>University College London, London, UK</p> <p>Department of Computer Science</p> <p><i>Teaching Assistant</i> for Image Processing (GV12) course Fall 2012–2013</p> |
| SUPERVISION | <p>PhD Students</p> <ul style="list-style-type: none"> • Yeshwanth Kumar 2021 – present • Yiangos Georgiou 2020 – present • Marios Loizou 2018 – present <p>MSc Students</p> <ul style="list-style-type: none"> • Maria Maslioukova 2021 (distinction) • Kyriakos Zantis 2019 (distinction) • Sergios Stamatis 2018 (distinction) <p>BSc Students</p> <ul style="list-style-type: none"> • Andreas Mylidonis 2021 • Stephanos Kyriakides 2018 • Christos Othonos 2017 (distinction) |

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| PROFESSIONAL ACTIVITIES | Program Committee Member | |
| | • CVPR Workshop on Structural and Compositional Learning on 3D Data | 2023 |
| | • Shape Modeling International | 2018–202 |
| | • 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, Journal of Artificial Intelligence Research, 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 | • AI HPC Cluster Committee – Chair | 2021–present |
| | • Doctoral Training Program Committee – Chair | 2020–present |
| | • Scientific Council – Member | 2019–present |
| JOURNAL PUBLICATIONS | <p>[1] Artopoulos, G., Maslioukova, M.I., Zavou, C., Loizou, M., Deligiorgi, M., Averkou, M. 2022. An Artificial Neural Network Framework for annotating and classifying Architectural Structure and Style of Built Heritage in 3D. <i>Journal of Cultural Heritage</i>. (under review) (project website)</p> <p>[2] Deligiorgi, M., Maslioukova, M.I., Averkou, 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>[3] Loizou, M., Averkou, 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>[4] Hu, R., Li, W., van Kaick, O., Huang, H., Averkou, 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>[5] Averkou, 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> | |

[6] Fish, N.*, **Averkiou, M.***, van Kaick, O., Sorkine-Hornung, O., Cohen-Or, D., Mitra, N. J. 2014. Meta-representation of Shape Families. *ACM Transactions on Graphics* 33, 4, 34:1-34:11. *joint first authors. (also presented in *SIGGRAPH 2014* - acceptance rate: 25%) ([project website](#))

[7] **Averkiou, M.**, Kim, V.G., Zheng, Y., Mitra, N.J. 2014. ShapeSynth: Parameterizing Model Collections for Coupled Shape Exploration and Synthesis. *Computer Graphics Forum* 33, 2, 125-134. (also presented in *Eurographics 2014* - acceptance rate: 25%) ([project website](#))

[8] Zheng, Y., Cohen-Or, D., **Averkiou, M.**, Mitra, N.J. 2014. Recurring Part Arrangements in Shape Collections. *Computer Graphics Forum* 33, 2, 115-124. (also presented in *Eurographics 2014* - acceptance rate: 25% - **Best Paper Award, 2nd prize**) ([project website](#))

CONFERENCE
PUBLICATIONS

[9] Loizou, M., Petrov, D., **Averkiou, M.**, Kalogerakis, E. 2022. Cross-Shape Attention for Part Segmentation of 3D Point Clouds. Submitted to *Eurographics 2023*. (under review, preprint available on [arxiv](#))

[10] Georgiou, Y., Kelly, T., **Averkiou, M.** 2022. Single-View Guided Facade Image Synthesis. Submitted to *Eurographics 2023*. (under review)

[11] Georgiou, Y., **Averkiou, M.**, Kelly, T. Kalogerakis, E. 2021. Projective Urban Texturing. In *Proceedings of International Conference on 3D Vision (3DV)*, 1034–1043. ([project website](#))

[12] 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](#))

[13] 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.

[14] 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](#))

[15] 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](#))

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

[17] **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*.

[18] **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*.

[19] 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

[20] 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](#))

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

THESES &
TECHNICAL
REPORTS

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

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

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

[25] **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