



Panayiotis Charalambous

COMPUTER GRAPHICS · COMPUTER ANIMATION · CROWDS · VIRTUAL HUMANS · DATA-DRIVEN SIMULATIONS

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“Make the change that you want to see in the world.”

Education

University of Cyprus

PH.D IN COMPUTER SCIENCE

- Thesis: “Data-Driven Techniques for Simulating and Evaluating Crowds”

Nicosia, Cyprus

April 2014

National and Kapodistrian University of Athens

M.SC IN INFORMATICS AND TELECOMMUNICATIONS

- Thesis: “Lightmap Generation Using Photon Mapping”

Athens, Greece

2002 - 2005

National and Kapodistrian University of Athens

B.SC IN INFORMATICS AND TELECOMMUNICATIONS

- Thesis: “Geometric Polygon Clipping Algorithms”

Athens, Greece

1998 - 2002

Professional Experience

Research Center on Interactive Media, Smart Systems and Emerging Technologies (RISE)

TEAM LEADER OF THE V-EUPNEA MRG

- Research Team Leader: “V-EUPNEA: Living, Breathing Virtual Worlds MRG.”

Nicosia, Cyprus

June 2019

University of Cyprus

VISITING LECTURER

- Lecturer on various courses

Nicosia, Cyprus

September 2018 - May 2019

The Cyprus Institute, CaSToRC Center

ASSOCIATE RESEARCH SCIENTIST

- Horizon2020 funded VI-SEEM project. Developed VR demonstrations in reconstructions of Nicosia.

Nicosia, Cyprus

December 2017 - August 2018

The Cyprus Institute, CaSToRC Center

COMPUTATIONAL SCIENTIST

- Horizon2020 funded VI-SEEM project. Developed VR demonstrations in reconstructions of Nicosia.

Nicosia, Cyprus

September 2016 - November 2017

Open University Cyprus

VISITING LECTURER

- Lecturer in the Masters level course: “Agents and Multi-agent systems”

Nicosia, Cyprus

February 2016 - June 2016

INRIA Rennes Bretagne-Atlantique, Mimetic & Lagadic Teams

POST-DOCTORAL FELLOW

- Worked on novel Crowd Simulation and Synthesis algorithms.

Rennes, France

June 2014 - May 2016

University of Cyprus, Graphics and Visualization Lab

RESEARCH ASSOCIATE

- Worked on various RPF funded projects: RecoNLife, MobileAR, SCOLIOSIS, SCOLIOSIS 2, KIKIPEZ.
- Teaching Assistant to various undergraduate and postgraduate level courses.

Nicosia, Cyprus

February 2007 - May 2014

University of Cyprus, Xi-Group Computer Architecture Lab

RESEARCH ASSOCIATE

- Developed simulation tools for power and thermal characteristics of CPUs

Nicosia, Cyprus

July 2005 - January 2007

Professional Activities

COMMITTEES

- **Conference chair** for the ACM Siggraph Conference on Motion, Interaction and Games (MIG) 2018. (mig2018.rise.org.cy)
- **International Program Committee** member for IEEE VR 2019, the ACM Siggraph Conference on Motion, Interaction and Games, the workshop on Virtual Humans and Crowds for Immersive Environments (2017-2019), the World Society for Computer Graphics (2017, 2018), IEEE-AIVR 2019 and IEEE Melecon (2016).

PROFESSIONAL MEMBERSHIPS

- Association of Computing Machinery (ACM).
- European Association of Computer Graphics (Eurographics).
- International Institute of Electrical and Electronics Engineers (IEEE) (2008-2010).

REVIEWING

- Transactions on Graphics (TOG), IEEE Transactions on Visualization and Computer Graphics, Computer Animation and Virtual Worlds Journal (CAVW), Computer and Graphics Journal, IEEE Transactions on Multimedia, IEEE Virtual Reality, Eurographics, Siggraph Asia, Visual Computing, Eurographics Symposium on Rendering (EGSR), VRST, WSCG, Pacific Graphics, Motion, Interaction and Games (MIG), Computer Graphics International (CGI), IEEE/RSJ International Conference on Intelligent Robots and Systems.

TALKS

- March 7, 2018: Colloquium at the European University Cyprus. Methods for the simulation and analysis of Human Crowds.
- October 4, 2017: Talk at The Cyprus Institute. Data-Driven methods for the Simulation, Analysis and Visualization of Human Crowds.
- April 7, 2014: Eurographics 2014. Tutorial (TUT1) on Data-Driven Crowd Simulation and Analysis (With Yiorgos Chrysanthou).

Teaching

University of Cyprus

September 2018 - December 2018

COURSES (LECTURER)

- CS426: Computer Graphics
- CS133: Object Oriented Programming
- CS131: Programming Principles I
- CS231: Data Structures and Algorithms

The Cyprus Institute

September 2017 - December 2017

PHD COURSES (LECTURER)

- CoS516: Computer Graphics and Data Exploration

Open University Cyprus

February 2016 - June 2016

MASTER COURSES (LECTURER)

- PES602: Agents and Multi-Agent Systems

University of Cyprus, Department of Computer Science

February 2007 - May 2014

MASTER COURSES (TEACHING ASSISTANT)

- CS656: Computer Graphics, Modelling and Realism, Spring Semester 2007 – 2008
- CS607: Graphical and Image Processing, Fall Semester 2008 – 2009
- CS653: Computer Games Software Technology (Lectures on Game A.I. - 2013, 2014)

UNDERGRADUATE COURSES (TEACHING ASSISTANT)

February 2007 - May 2014

- CS426: Computer Graphics, Fall Semesters 2007 – 2009
- CS231: Data Structures and Algorithms, Fall Semesters 2008-2012
- CS497: Numerical Analysis, Fall Semester 2007 – 2008
- CS034: Introduction to Programming for Engineers, Spring Semester 2007-2008
- CS032: Introduction to Programming and Problem Solving, Spring Semester 2007-2008

University of Cyprus, Department of Computer Science

2016 - 2018

OTHER LECTURES

- CS653: Computer Games Software Technology. Guest Lectures on Artificial Intelligence for Computer Games.
- Summer School 2016, 2018. Lectures on Computer Graphics, Game Design, Animation and Development of a game in the Unity Game Engine.

Publications

Book Chapters

1. Charalambous P., Chrysanthou Y., “Learning Heterogeneous Crowd Behavior from the Real World”. In Pelechano N., Allbeck J., Kapadia M. and Badler N., editors, “Heterogeneous Crowd Simulation”, pp. 43–60. A.K. Peters, 2016.
2. Charalambous P., Chrysanthou Y., “Data Driven Crowd Evaluation”. In Pelechano N., Allbeck J., Kapadia M. and Badler N., editors, “Heterogeneous Crowd Simulation”, pp. 179–196. A.K. Peters, 2016.
3. Artopoulos G., Charalambous P., “Virtual Environments as a Technological Interface between Built Heritage and the Sustainable Development of the City”. In Filippo Angelucci, editor, “BETHA – Built Environment Technologies and Healthy Architectures Series”, Vol. 86.1.4. Franco Angeli, 2019.
4. Charalambous P., “Crowds in the City”, In Artopoulos G., “Hybrid Heritagescapes as Urban Commons in Mediterranean Cities: essays on accessing the deep-rooted spatial interfaces of cities”. CreateSpace. Cyprus, Nicosia: The Cyprus Institute. July 2018.

Journals

1. Charalambous P., Karamouzas I., Guy S, Chrysanthou Y., “A Data-Driven Framework for Visual Crowd Analysis”. Computer Graphics Forum, Vol. 33, Issue 7, pp. 41–50, October 2014 (Presented at Pacific Graphics 2014, Seoul, S. Korea).
2. Charalambous P., Chrysanthou Y., “The PAG Crowd: A Graph Based Approach for Efficient Data-Driven Crowd Simulation”. Computer Graphics Forum, Vol. 33, Issue 8, pp. 95–108, December 2014.
3. Aristidou A., Charalambous P., Chrysanthou Y., “Emotion Analysis and Classification: Understanding the Performers’ Emotions Using the LMA Entities”. Computer Graphics Forum, Vol. 34, Issue 6, pp. 262–276, September 2015 (Presented at Eurographics 2016, Lisbon, Portugal).
4. Aristidou A., Stavrakis E., Charalambous P., Chrysanthou Y. and Stephania Loizidou Himona, “Folk Dance Evaluation Using LMA”. Journal on Computing and Cultural Heritage, Vol. 8, Issue 4, Article 20, August 2015.
5. Zhiguo R., Charalambous P., Bruneau J., Peng Q., Pettré J. “Group Modeling: a Unified Velocity-based Approach”. Computer Graphics Forum, Vol. 36, Issue 8, pp. 45–56. 2016 (Presented at Eurographics 2017, Lyon, France).
6. Artopoulos G., Charalambous P., Wehmeier C., “Immersive Computing and Crowd Simulation Techniques in Modeling Urban Commons: the case of Nicosia-Cyprus”. International Journal of E-Planning Research (IJERPR), Vol. 8, Issue 1 (2019).
7. Charalambous, P. and Artopoulos, G., “Enabling virtual collaboration in Digital Cultural Heritage in the SEEM region”. Scalable Computing: Practice and Experience (SCPE), Vol. 19, Issue 2, pp. 161–174, May 2018.

Conferences

1. Artopoulos G., Charalambous P. “Analysis of Spatio-temporal Data in Virtual Historic Spaces”. In Proceedings of ICAT-EGVE 2018 - International Conference on Artificial Reality and Telexistence and Eurographics Symposium on Virtual Environments, November 2018.
2. Kyrlitsias G., Neto A. B., Charalambous P., Avraamides M., Chrysanthou Y. “Virtual Environment Navigation Assisted by Neural Networks”. In Proceedings of Virtual Humans and Crowds for Immersive Environments (VHCIE 2018). 2018.
3. Jordao K., Charalambous P., Christie M., Pettré J. and Cani P. M., “CrowdArt: Density and Flow Based Crowd Motion Design”. In Proceedings of the Eighth International Conference on Motion in Games (MIG ’15). ACM, New York, NY, USA, 2015.
4. Ramirez Jose Guillermo Rangel, Lange D., Charalambous P., Esteves C., and Pettré, J., “Optimization-based computation of locomotion trajectories for crowd patches”. In Proceedings of the Seventh International Conference on Motion in Games (MIG ’14). ACM, New York, NY, USA, 7–16. 2014.
5. Charalambous P., Chrysanthou Y., “Classifying Pedestrian Behaviour using Random Forests”, Poster at Motion in Games 2013 (MIG’ 13), Trinity College, Dublin, Ireland, November 7 – November 9, 2013.
6. Charalambous, P., Iliadou, H., Apostolou, C. and Chrysanthou, Y., 2012, “Reconstruction of Everyday Life in 19th Century Nicosia”. 4th International Conference, EuroMed 2012, Limassol, Cyprus, October 29 – November 3, 2012. Proceedings, 568–577.
7. Charalambous P., Chrysanthou Y., “Learning Crowd Behavior”, Workshop on Crowd Simulation. Collocated with CASA 2010, Saint-Malo, France, May 31 – June 3, 2010
8. Charalambous P., Chrysanthou Y., “Learning crowd steering behaviors from examples”, Proceeding MIG’10 Proceedings of the Third international conference on Motion in games pp: 35-35, 2010
9. Iliadou H., Charalambous P., and Chrysanthou Y., “Reviving Nicosia of the XIXth Century”, 11th International Conference on Urban History, EAUH 2012, Prague, Czech Republic, 2012

Awards/Distinctions

- Math **Cyprus Mathematics Society**, Distinction in the Nicosia Mathematics Competition. 1995-1996
- Math **Cyprus Mathematics Society**, Distinction in the Pancyprian Mathematics Competition. 1995-1996

Technical Skills

Languages, C, C++, C#, Python, Java, Pascal, JavaScript, Basic, and Prolog.

Programming Tools, Unity3D, Unreal Engine, Visual Studio, gcc, g++, flex, bison, PyCharm, eclipse, NetBeans IDE, Borland JBuilder 9, Turbo Pascal, Matlab, Octave.

Multimedia/3D Tools, 3D Studio Max, DAZ3D, Krita, Photoshop, Gimp, Camtasia.

Operating Systems, Microsoft Windows 3.1 - 10, MS-DOS, Multiple Linux Distributions, Unix.

Other, Deep Learning (Tensorflow, Keras, Theano), scikit-learn Machine Learning Toolkit, scipy, OpenGL, GLUT, MFC, AWT, Qt, Swing, doxygen, Matlab, UML, Design Patterns, OOP, SQL, MongoDB, TCP/IP Programming, Unix System Programming.