

Employment

- 2018-... **Assistant Professor, Durham University**, *Department of Computer Science, UK.*
- 2015-2018 **Post-doctoral Fellow, Inria Sophia-Antipolis**, *Team GraphDeco, France, 28 months.*
Inria@Silicon Valley Grant & H2020 EMOTIVE project (727188)
- Feb.-July 2016 **Visiting Scholar, UC Berkeley**, *Inria@Silicon Valley Grant, French Institute for Research in Computer Science and Automation, Sophia-Antipolis, France, Visiting Bankslab, Vision Science.*
"Improving 3D Stereo Displays based on Human Perception"
Collaborators: Prof. Martin S. Banks, Dr. George Drettakis

Education

- 2015 **PhD.**, *Department of Electronic & Computer Engineering, Technical University of Crete, Greece.*
"Context-aware Gaze Prediction applied to Game Level Design, Level-of-Detail and Stereo Manipulation"
Supervisor: Assoc. Prof. Katerina Mania, Collaborators: Dr. George Drettakis, Prof. Douglas Cunningham
- 2011 **MSc.**, *School of Computer Science, Athens University of Economics and Business, Greece.*
Thesis: *"Brain-MRI Volume Data Processing and Visualization"*
Supervisors: Assist. Prof. Georgios Papaioannou, Prof. Theoharis Theoharis
- 2009 **BSc (Hons)**, *Department of Informatics & Telecommunications, University of Athens, Greece.*
Thesis: *"Efficient Soft Shadow Mapping"*
Supervisors: Dr. George Drettakis, Prof. Theoharis Theoharis

Peer-reviewed journal publications

- 14 Vera, J., Redondo, B., Galan, T., Machado, P., Molina, R., **Koulieris, G. A.**, Jiménez, R. (2021). Dynamics of the accommodative response and facility with dual-focus soft contact lenses for myopia control. In *Contact Lens and Anterior Eye*.
- 13 Vera, J., Redondo, B., **Koulieris, G. A.**, Molina, R., Jiménez, R. (2021). Examining the Validity of a New Method for the Objective Assessment of Binocular Accommodative Facility (2Q-AF Test): A Comparison with ± 2.00 DS Lens Flippers. In *Current Eye Research*, 1-7.
- 12 Redondo, B., Vera, J., **Koulieris, G. A.**, Molina-Romero, R., Jiménez, R. (2021). Short-term Effects of Caffeine Intake on Binocular Accommodative Facility: a Quantitative and Qualitative Analysis. In *Clinical and Experimental Optometry*, 1-5.
- 11 Drakopoulos, P., **Koulieris, G. A.**, Mania, K. (2021). Eye Tracking on Unmodified Smartphone-based VR Headsets using the Selfie Camera. In *ACM Transactions on Applied Perception (TAP)* 18.3 (2021): 1-20.
- 10 Vera, J., Redondo, B., **Koulieris, G. A.**, Torrejon, A., Jiménez, R., Garcia-Ramos, A. (2020). Intraocular Pressure Responses to Four Different Isometric Exercises in Men and Women. *Optometry and Vision Science*, 97(8), 648-653.
- 9 Vera, J., Redondo, B., Perez-Castilla, A., **Koulieris, G. A.**, Jiménez, R., Garcia-Ramos, A. (2020). The Intraocular Pressure Response to Lower-body and Upper-body Isometric Exercises is affected by the Breathing Pattern. *European Journal of Sport Science*, 1-18.
- 8 Zhong, F., **Koulieris, G. A.**, Drettakis, G., Banks, M. S., Chambe, M., Durand, F., Mantiuk, R. (2019) DiCE: Dichoptic Contrast Enhancement for VR and Stereo Displays. *ACM SIGGRAPH Asia 2019, Transactions on Graphics*, 38, 6, Article 211
- 7 **Koulieris, G. A.**, Akşit, K., Stengel, M. Mantiuk, R. K., Mania, K., Richardt, C. (2019) Near-Eye Display and Tracking Technologies for Virtual and Augmented Reality. *Computer Graphics Forum (EG 2019 STAR)*
- 6 Vera, J., Redondo, B., Molina, R., **Koulieris, G. A.**, Jiménez, R. (2019). Validation of an Objective Method for the Qualitative and Quantitative Assessment of Binocular Accommodative Facility. *Current Eye Research*.
- 5 Vera, J., Rodríguez, R., García, D., Pérez, A., Redondo, B., Delgado, G., **Koulieris, G. A.**, García, A. (2019) Acute Intraocular Pressure Changes during Isometric Exercise and Recovery: the Influence of Exercise Type and Intensity, and Participant's Sex. *Journal of Sports Sciences*, Taylor & Francis

- 4 Vera, J., Rodríguez, R., Redondo Cabrera, B., Torrejón, A., **Koulieris, G. A.**, De Moraes, C., García Ramos, A. (2018) Investigating the Immediate and Cumulative Effects of Isometric Squat Exercise for Different Weight Loads on Intraocular Pressure: A Pilot Study. *Sports Health*, SAGE Journals
- 3 **Koulieris, G. A.**, Bui, B., Banks, M. S., Drettakis, G. (2017). Accommodation and Comfort in Head Mounted Displays. *ACM Transactions on Graphics (ACM SIGGRAPH 2017)*, Los Angeles, California 30 July - 3 August
- 2 **Koulieris, G. A.**, Drettakis, G., Cunningham, D., Mania, K. (2014). C-LOD: Context-aware Material Level-Of-Detail applied to Mobile Graphics. *Computer Graphics Forum (EGSR) (Vol. 33, No. 4, pp. 41-49)*, Lyon, France
- 1 **Koulieris, G. A.**, Drettakis, G., Cunningham, D., Mania, K. (2014). An Automated High Level Saliency Predictor for Smart Game Balancing. *ACM Transactions on Applied Perception (TAP) 11, 4, Article 17 (September 2014)*, 21 pages.

Peer-reviewed conference publications

- 10 Polychronakis, A., **Koulieris, G. A.**, Mania, K. (2021). Emulating Foveated Path Tracing. In *ACM SIGGRAPH Conference on Motion, Interaction & Games (MIG 2021)*. ACM.
- 9 Drakopoulos, P., **Koulieris, G. A.**, Mania, K. (2020, March). Front Camera Eye Tracking for Mobile VR. In *2020 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW) (pp. 643-644)*. IEEE.
- 8 Elliman, J. P., Bethapudi, S., **Koulieris, G. A.** (2020). Medical Ultrasound Training in Virtual Reality. In *38th Eurographics UK Computer Graphics & Visual Computing Conference (CGVC)*.
- 7 Zhong, F., **Koulieris, G.A.**, Drettakis, G., Durand, F., Banks, M.S., Chambe, M., Mantiuk, R. (2019) DiCE: Dichoptic Contrast Enhancement for Binocular Displays. *Posters, ACM SIGGRAPH 2019, Los Angeles, USA*
- 6 Banks, M. S., Johnson, P. V., Kim, J., **Koulieris G. A.**, Drettakis, G., Parnell, J., Love, G. D. (2017). Focus-tunable and Fixed Lenses and Stereoscopic 3D Displays. *Emerging Liquid Crystal Technologies XII, SPIE 2017, San Francisco, USA*
- 5 **Koulieris, G. A.**, Drettakis, G., Cunningham, D., Mania, K. (2016). Gaze Prediction using Machine Learning for Dynamic Stereo Manipulation in Games. *IEEE VR 2016*, pp. 113-120, Greenville, South Carolina 19-23 March
- 4 Sidorakis, N., **Koulieris, G. A.**, Mania, K., "Binocular eye-tracking for the control of a 3D immersive multimedia user interface," *IEEE 1st Workshop on Everyday Virtual Reality (WEVR)*, pp.15-18, 23-25 March 2015, Arles, France
- 3 **Koulieris, G. A.**, Drettakis, G., Cunningham, D., Mania, K. (2014). High Level Saliency Prediction for Smart Game Balancing. *Talk, ACM SIGGRAPH 2014, Vancouver, Canada*
- 2 **Koulieris, G. A.**, Drettakis, G., Cunningham, D., Sidorakis, N., Mania, K. (2014). Context-aware Material Selective Rendering for Mobile Graphics. *Poster [won Bronze Medal at the ACM Student Research Competition], ACM SIGGRAPH 2014, Vancouver, Canada*
- 1 Paraskeva, C., **Koulieris, G. A.**, Coxon, M., Mania, K. (2012). Gender Differences in Spatial Awareness in Immersive Virtual Environments: A Preliminary Investigation. *11th ACM Siggraph International Conference on Virtual Reality Continuum and its Applications on Industry, December 2012, Singapore*.

Peer-reviewed courses/tutorials in ACM SIGGRAPH & IEEE VR

- 4 **Koulieris, G. A.**, Akşit K., Richardt C., Mantiuk R. (2018). Cutting-edge VR/AR Display Technologies (Gaze-, Accommodation-, Motion-aware and HDR-enabled). *SIGGRAPH Asia 2018 Course, 4-7 December, Tokyo, Japan*.
- 3 **Koulieris, G. A.**, Akşit K., Richardt C., Mantiuk R., Mania K. (2018). Cutting-edge VR/AR Display Technologies (Gaze-, Accommodation-, Motion-aware and HDR-enabled). *IEEE VR 2018, Full-day course, Reutlingen, Germany*.
- 2 Patney, A., Zannoli, M., **Koulieris, G. A.**, Kim, J., Wetzstein, G., Steinicke, F. (2017). Applications of visual perception to virtual reality rendering. *ACM SIGGRAPH Half-day Course '17, LA*
- 1 McNamara, A., Mania, K., **Koulieris, G. A.**, Itti, L. (2014). Attention-aware rendering, mobile graphics and games. *ACM SIGGRAPH Half-day Course '14, Vancouver*

Patents

- 2018 **Pseudo Light-field Display Apparatus**, Banks, M., Drettakis, G., Love, G., **Koulieris, G. A.**, Cholewiak, S., Srinivasany, P., Ng, Y-R, US Patent WO2017192887A3.

Funding

- 2020 **Departmental PhD scholarship awarded (PI, competitive)** *Clinical and Pre-operative Assessment of Lower Limb Rotational Profiles in Virtual and Augmented Reality*

- 2019 **Departmental PhD scholarship awarded (PI, competitive)** *Medical Ultrasound Training in Virtual Reality*
- 2018 **European Regional Development Fund Intensive Industrial Innovation Programme (Co-PI)** *Linking Perceptions to Reality*, with Sarah Xiao, DU Business School
- 2015-2017 **Inria@Silicon Valley, (Co-PI, grant holder)** *Improving 3D Stereo Displays based on Human Perception*, Sophia-Antipolis/UC Berkeley with George Drettakis and Martin S. Banks

Received scholarships

- 2012-2014 **Heracleitus II**, EU Social Fund & Greek National Strategic Reference Framework (36 months)
- 2008-2009 **Inria** Sophia-Antipolis Unit, France, REVES Team Intern (6 months)

Awards

- 2020 **Discretionary Award** for contributions in Research, Teaching & Citizenship within the Department of Computer Science, Durham University
- 2014 **Bronze Medal** at the Microsoft-sponsored ACM Graduate Student Research Competition, SIGGRAPH 2014
- 2010 **Top-3 MSc semester course performance**, School of Computer Science, AUEB
- 2004 **Great Moment for Education Award**, Award for the grades achieved at the university admission exams, Eurobank EFG

Teaching

- Lecturer **Visualisation**, 4th year module 2019-... (*Durham University*)
- Virtual & Augmented Reality**, 3rd & 4th year module 2018-... (*Durham University*)
- Advanced Computer Graphics**, 4th year module 2019-20 (*Durham University*)
- Image Processing**, 2nd year module 2020-21 (*Durham University*)
- Teach. Asst. **Virtual Reality**, Laboratory Course 2012-2015 (*TUC*)
- Computer Graphics**, Laboratory Course 2009-2010 (*AUEB*), 2012-2015 (*TUC*)

Editorial board memberships

- Assoc. Editor ACM Transactions on Applied Perception
- Assoc. Editor Frontiers in VR, Professional Training in Extended Reality: Challenges and Solutions, since 2020
- Assoc. Editor The Visual Computer Journal, since 2018

International program committee memberships

- CGI Computer Graphics International, 2021
- CGVC Eurographics Computer Graphics & Visual Computing conference, since 2019

Invited talks

- 2019 **Durham University, UK**, Accommodation and Comfort in Head-mounted Displays
- 2017 **University of Cambridge, UK**, Accommodation and Comfort in Head-mounted Displays
- Inria Rennes, France**, Applied Visual Perception for Near-eye Displays

Research visits

- 2017 **Three research visits to Cambridge Uni Computer Science Dept. Rainbow group**
- 2015 **Two research visits to UC Berkeley's Visual Space Perception Lab (Bankslab)**

Reviewer - Service

- 2013-... ACM SIGGRAPH (& Asia) Technical Papers, ACM SIGGRAPH General Submissions, ACM Special Interest Group on Computer-Human Interaction (SIGCHI), ACM Symposium on Applied Perception, ACM Transactions on Applied Perception, ACM Computational Aesthetics, Computer Graphics Forum, Eurographics, Frontiers Neuroscience, IEEE Transactions on Visualization and Computer Graphics (TVCG), IEEE VR, ISMAR, Journal of Vision, MIT Presence: Teleoperators and Virtual Environments, VS Games, Computer Graphics International

Vocational training

- 2018-... Postgraduate Certificate in Learning & Teaching in Higher Education
- 2018 Unconscious Bias, Durham University, UK
- Preparing to Supervise, Durham University, UK
- Respecting Others: Challenging Negative Behaviours, Durham University, UK
- 2016 Biomedical responsible conduct of research, UC Berkeley, USA

Research Interests

Computer Graphics
Human Perception
Virtual Reality
Display Engineering
Rendering

Admin responsibilities / other professional experience

- 2019-... **Equality, Diversity & Inclusion Committee (EDIC) co-director**, Durham University, UK.
- 2019-... **Centre for Vision and Visual Cognition (CVVC) co-director**, Durham University, UK.
- 2013-15 **Co-authoring of EU research proposals**, Technical University of Crete, Chania, Greece.
- 2013-15 **Co-organizing of Open Science Days**, Technical University of Crete, Chania, Greece.
- 2011 **Systems Manager**, Hellenic Army, Athens, Greece.
- 7/2010 **Summer School in New Technologies**, NCSR Demokritos, Athens, Greece.
- 10/2008-3/2009 **REVES Team Intern**, Inria, Sophia-Antipolis Unit, France.
- Working on efficient Soft Shadow Mapping algorithms

Graduate students (co-)supervised/mentored

- UC Berkeley Avi Aizenman, 2019-..., Collaboration on *Vision research in HMDs*
- Durham David Sibrina, 2020-..., (Main supervisor) *Clinical and pre-operative assessment of lower limb rotational profiles in VR & AR* collab. with University Hospital of North Durham
- Priyatha Bethapudi, 2020-..., (Main supervisor) *VR & AR in shoulder arthrography to improve pre-arthroscopic and pre-operative planning and assessment of glenohumeral joint pathologies* collab. with University Hospital of North Durham
- James Patrick Elliman, 2019-..., (Main supervisor) *Medical ultrasound training in VR* collab. with University Hospital of North Durham
- Mariam Sarhan, 2018-..., (Co-supervisor) *Linking perceptions to reality, investigating the role of customer equity in consumer experience design using VR technologies*
- Chris Smith, 2018-..., (Main supervisor) *Automatic DMX light setup*
- Uni Granada Beatriz Redondo, 2019, Collaboration on *The study of the accommodative function under different arousal and attentional states*
- TUC Andreas Polychronakis, 2019-..., Member of supervisory team on *Foveated Rendering*
- Panagiotis Drakopoulos, 2018-20, Collaboration on *Eye Tracking on Unmodified Smartphone-based VR Headsets using the Selfie Camera*

Several undergraduate students (co-)supervised/mentored

Names upon request

Languages

- English C2 Proficient
- German B2 Upper Intermediate
- Greek Native speaker

Workshops

Summer School on Human Computer Confluence, July 2012, Milan, Italy

Modern Software Applications, *Apple Computers, DIT UOA, Greece*

JAVA Developer Day, *Sun Microsystems, AIT Athens, Greece*

Linux Seminar, *Divani Caravel, Athens, Greece*

Green ICT Standards, *Divani Caravel, Athens, Greece*

InterMedia Café for the future of multi-device interactivity, *Intracom, Athens, Greece*