NIKOLAOS ZIOULIS

Research Scientist and Engineer

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A research engineer working at the intersection of computer graphics, computer (3D) vision and machine learning technologies with a focus on immersive / emerging media and live realistic tele-presence technologies spanning across the XR spectrum.

Experience

Oct 13 - now

Centre for Research and Technology Hellas, **Information Technologies Institute**, **Visual Computing Lab**, Thessaloniki, Greece.

Research Associate

SELECTED PROJECTS: **ATLANTIS**, **VRTogether**, **Hyper360**, **5G-Media**, **Factory2Fit**, **RePlay**

Education

Jun 12

Aristotle University of Thessaloniki, School of Electrical and Computer Engineering, Thessaloniki, Greece.

Diploma in Electrical & Computer Engineering (Bachelor & Master)

Skills

Computer Graphics

OpenGL, Glew/Glfw, GLSL, OptiX, Blender, ImGui

Intimate understanding of GPU architectures and programmable 3D rendering pipeline concepts

Computer Vision

OpenCV, Eigen, Kinect 2.0, RealSense, g2o, (nano)flann

Very experienced with mesh, point cloud and image processing algorithms.

Machine Learning

PyTorch, Caffe, TensorFlow 2

Extensive experience with state-of-the-art CNN architectures, models and training.

Software Development

C++ 11/14, CUDA/Thrust, MATLAB, Windows, Python, Unity3D, Visual Studio, Linux, C#/WPF, Boost, VS Code, Git

Solid programming foundation and real-time systems engineering.

Other Tools

MS Office, RabbitMQ, LaTeX, MeshLab, Docker, Web 2.0

Familiar with a diverse set of productivity software and other tools.

Languages

Greek, English, German

Cultivated great communication skills through heavy international project involvement (tele-conferences, project meetings, conference participation)

Soft Skills

Excellent Listener, Dedicated & Motivated, Multi-tasking & Effective Delegation, Team Coordination, Critical Thinking & Problem Solving

Publications

*(Selected, for a complete and up to date list please check my **Google Scholar profile**)*

2020

Albanis, G.*, **Zioulis, N.***, Dimou, A., Zarpalas, D., & Daras, P. "*DronePose: Photorealistic UAV-Assistant Dataset Synthesis for 3D Pose Estimation via a Smooth Silhouette Loss*". European Conference on Computer Vision Workshops (**ECCVW**). [**project**]

Sterzentsenko, V.*, Doumanoglou, A.*, Thermos, S.*, **Zioulis, N.***, Zarpalas, D., & Daras, P.. "*Deep soft procrustes for markerless volumetric sensor alignment*". In IEEE Conference on Virtual Reality and 3D User Interfaces (**IEEE VR**). [**project**]

Gkitsas, V.*, **Zioulis, N.***, Alvarez, F., Zarpalas, D., & Daras, P. Deep Lighting Environment Map Estimation from Spherical Panoramas. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW). [**project**]

2019

Sterzentsenko, V.*, Saroglou, L.*, Chatzitofis, A.*, Thermos, S.*, **Zioulis, N.***, Doumanoglou, A., Zarpalas, D. & Daras, P., "*Self-Supervised Deep Depth Denoising*", IEEE International Conference on Computer Vision ***(ICCV).*** **[project]**

Zioulis, N., Karakottas, A., Zarpalas, D., Alvarez, F.& Daras, P., "*Spherical View Synthesis for Self-Supervised 360º Depth Estimation*". International Conference on 3D Vision ***(3DV)*** **[project]**

Karakottas, A., **Zioulis, N**., Samaras, S., Ataloglou, A., Gkitsas, V., Zarpalas, D., & Daras, P., "*360º Surface Regression with a Hyper-Sphere Loss*". International Conference on 3D Vision ***(3DV)*** **[project]**

Doumanoglou, A.*, Drakoulis, P.*, **Zioulis, N.**, Zarpalas, D., & Daras, P., "*Benchmarking Open-Source Static 3D Mesh Codecs for Immersive Media Interactive Live Streaming*". IEEE Journal on Emerging and Selected Topics in Circuits and Systems ***(JETCAS).***

Alvarez, F., Breitgand, D., Griffin, D., Andriani, P., Rizou, S., **Zioulis, N.**, ... & Phan, T. K. "*An edge-to-cloud virtualized multimedia service platform for 5G networks*". IEEE Transactions on Broadcasting (***TOB***)

Christaki, K., Apostolakis, K. C., Doumanoglou, A., **Zioulis, N.**, Zarpalas, D., & Daras, P., "*Space Wars: An AugmentedVR Game*". International Conference on Multimedia Modeling ***(MMM).*** **Best Demo Award**

2018

Zioulis, N.*, Karakottas, A.*, Zarpalas, D., & Daras, P. "*OmniDepth: Dense depth estimation for indoors spherical panoramas*". European Conference on Computer Vision ***(ECCV).*** **[project]**

Alexiadis, D. S., **Zioulis, N.**, Zarpalas, D., & Daras, P., "*Fast deformable model-based human performance capture and FVV using consumer-grade RGB-D sensors*". Pattern Recognition ***(PR).***

Sterzentsenko, V.*, Karakottas, A.*, Papachristou, A.*, **Zioulis, N.***, Doumanoglou, A., Zarpalas, D., & Daras, P., "*A low-cost, flexible and portable volumetric capturing system*". International Conference on Signal-Image Technology & Internet-Based Systems ***(SITIS)*** **[project]**

Karakottas, A.*, Papachristou, A.*, Doumanoglou, A.*, **Zioulis, N.***, Zarpalas, D., & Daras, P. "*Augmented VR*". IEEE Conference on Virtual Reality and 3D User Interfaces (***IEEE VR***) **[video]**

Papachristou, A., **Zioulis, N.**, Zarpalas, D., & Daras, P., "*Markerless structure-based multi-sensor calibration for free viewpoint video capture*", International Conference on Computer Graphics, Visualization and Computer Vision ***(WSCG).***

Doumanoglou, A., Griffin, D., Serrano, J., **Zioulis, N.**, Phan, T. K., Jiménez, D., ... & Daras, P. "*Quality of experience for 3-d immersive media streaming*." IEEE Transactions on Broadcasting (***TOB***)

Doumanoglou, A., **Zioulis, N.**, Christakis, E., Zarpalas, D., & Daras, P. "*Subjective quality assessment of textured human full-body 3D-reconstructions*." International Conference on Quality of Multimedia Experience (***QoMEX***)

Doumanoglou, A., **Zioulis, N**., Griffin, D., Serrano, J., Phan, T. K., Jiménez, D., ... & Daras, P. "*A system architecture for live immersive 3D-media transcoding over 5G networks*." IEEE International Symposium on Broadband Multimedia Systems and Broadcasting (***BMSB***)

2017

Zioulis, N.*, Papachristou, A.*, Zarpalas, D., & Daras, P., "*Improving Camera Pose Estimation via Temporal EWA Surfel Splatting*". IEEE International Symposium on Mixed and Augmented Reality ***(ISMAR)***

Alexiadis, D. S., Chatzitofis, A., **Zioulis, N.**, Zoidi, O., Louizis, G., Zarpalas, D., & Daras, P. "*An integrated platform for live 3D human reconstruction and motion capturing*". IEEE Transactions on Circuits and Systems for Video Technology ***(TCSVT)***

2016

Zioulis, N., Alexiadis, D., Doumanoglou, A., Louizis, G., Apostolakis, K., Zarpalas, D., & Daras, P. "*3D tele-immersion platform for interactive immersive experiences between remote users*". IEEE International Conference on Image Processing (***ICIP***) **[demo]**