

VASILEIOS MAGOULIANITIS

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EDUCATION

University of Southern California, Los Angeles, CA

- ◇ PhD Viterbi Student - Department of Electrical and Computer Engineering *Present*
- ◇ Concentration: Machine Learning & Data Science
- ◇ Focus on Computer Vision, Machine Learning, Medical Imaging

University of Thessaly, Volos, Greece

- ◇ BSc & MSc in Computer, Telecommunications & Networks Engineering *2015*
(5-year joint degree; 300 ECTS)
- ◇ Focus on Multimedia Algorithms and Implementations
- ◇ *Thesis Title:* Hardware Implementation of HEVC Inverse Integer Transform with a High-Level Synthesis tool

PROFESSIONAL & RESEARCH EXPERIENCE

USC, Media Communications Lab

Research Assistant – (20 hours/week)

April 2020 - present
Los Angeles, CA

- ◇ Contributed to the “AI for Prostate Cancer” project about the detection of potentially malignant areas on MRI data, as well as the further stratification of the risk level. Working also on the whole slide histological image classification problem.
- ◇ Conduct research on unsupervised and explainable ways for nuclear segmentation on histology images

CERTH, Information Technologies Institute

Research Assistant – (40 hours/week)

March 2019 - Dec. 2019
Thessaloniki, Greece

- ◇ Worked on the EU-“ALADDIN” project, developing a system for detecting long-range inimical UAVs, using visual, IR and radar data. Conducted research on improving the system’s retrieval performance for distant UAVs using visual and radar data.

Greek Army

Mandatory Military Service

March 2018 - Dec. 2018
Chios, Greece

- ◇ Informatics and Electronic Warfare

CERTH, Information Technologies Institute

Research Assistant – (40 hours/week)

Sept. 2016 - Dec. 2017
Thessaloniki, Greece

- ◇ Worked on the EU-“DANTE” project about detecting terrorist-related activity through online multimedia content. Developed a tool for extracting semantic information from visual content, to indexing the extracted visual features for efficient retrieval through multimedia databases.
- ◇ Carried out research on person re-identification and action recognition using deep learning methods.

IRIDA Labs s.a.

Intern Computer Vision Software Developer – (40 hours/week)

July 2015 - Dec. 2015
Patras, Greece

- ◇ Contributed in the EU-“White-R” project in the field of machine vision. Implemented software for object recognition with high accuracy in position and rotation, using OpenCV library and other custom algorithms and techniques.
- ◇ Developed a real-time application for generic object tracking and detection in video, using optical flow equations and state-of-the-art feature descriptors.

PUBLICATIONS

[1] Zhao, G., Magouliaitis, V., You, S., and Kuo, C. C. J. (2022). **LGSQE: Lightweight Generated Sample Quality Evaluation**. arXiv preprint arXiv:2211.04590. (accepted in **ICIP 2023**).

[1] Zhao, G., Magouliaitis, V., You, S., and Kuo, C. C. J. (2023). **Lightweight Quality Evaluation of Generated Samples and Generative Models**. *APSIPA Transactions on Signal and Information Processing*, 12(1) (accepted in **APSIPA journal 2023**).

[1] Magouliaitis, Vasileios, Yijing Yang, and C-C. Jay Kuo. ”**HUNIS: High-Performance Unsupervised Nuclei Instance Segmentation**.” arXiv preprint arXiv:2203.14887 (2022) (accepted in **IVMSP 2022**).

[2] Magouliaitis, V., Han, P., Yang, Y., & Kuo, C. C. J. (2021). **Unsupervised Data-Driven Nuclei Segmentation For Histology Images**. arXiv preprint arXiv:2110.07147. (accepted in **ICIP 2022**)

[3] Magouliaitis, V., Ataloglou, D., Dimou, A., Zarpalas, D., and Daras, P. “Does Deep Super-Resolution Enhance UAV Detection?”. In 2019 16th IEEE International Conference on Advanced Video and Signal Based Surveillance (AVSS) (pp. 1-6). Taipei, Taiwan.

[4] Magouliaitis V. and Katsavounidis I. ”HEVC Decoder Optimization in Low Power Configurable Architecture for Wireless Devices”, in IEEE 16th International Symposium on World of Wireless, Mobile and Multimedia Networks (WoWMoM), Boston MA, 2015.

[5] Yang, Yijing, Vasileios Magouliaitis, and C-C. Jay Kuo. ”E-pixelhop: An enhanced pixelhop method for object classification.” arXiv preprint arXiv:2107.02966 (2021). (Accepted to **APSIPA ASC 2021**)

[6] Samaras, S., Magouliaitis, V., Dimou, A., Zarpalas, D., and Daras, P. “UAV Classification with Deep Learning Using Surveillance Radar Data”. In *International Conference on Computer Vision Systems* (pp. 744-753). Springer, Cham., Thessaloniki, Greece

HONORS & AWARDS

- ◇ Admitted to the Electrical Engineering PhD Program of Department at USC and awarded a research assistantship from the ECE Department *2021*
- ◇ Awarded the Frederick Angus Gross Scholarship, as part of the admission process to the USC Viterbi School of Engineering MSc program *2019*
- ◇ Graduated 3rd in his class -top 3% of graduates- from the Department of Electrical & Computer Engineering, University of Thessaly, Greece. *2015*

SKILLS

Computer Languages	C/C++, Python, MATLAB, LaTeX
Software Tools	Visual Studio, Intel Video Analyzer, Intel Vtune Profiler, Git
Machine Learning Frameworks	Tensorflow, Keras
Hardware Tools	ISE Design Suite, Design Compiler, HLS Vivado, Spice
Architectures	Intel x86, ARM, Tensilica Xtensa, MIPS
Standards & Codecs	HEVC/H.265, AVC/H.264, MPEG2/1, JPEG

ONLINE OPEN COURSES

- ◇ **Machine Learning** - *Stanford University* *2016*
- ◇ **Fundamentals of Digital Image and Video Processing** - *Northwestern University* *2015*

LANGUAGES

- ◇ English (Fluent), French (Basic), Greek (Native)