Nikolaos Gkanatsios

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🖺 nickgkan.github.io

Education

2020 – Present **Carnegie Mellon University, Robotics Institute**, PhD Student.
- Advisor: Katerina Fragkiadaki, Assistant Professor, MLD, CMU
- Research on Robotic Vision

2011 – 2017 **National Technical University of Athens (NTUA)**, *ECE*, B.Sc/M.Sc. (5-year diploma).
- GPA 9.22/10, 9th among 328 in class, 1st in Electronics and Systems major
- Thesis on *"Multimodal Classification and Segmentation of Fine-Grained Activities in Videos"*
- Thesis supervisor: Petros Maragos, Professor, ECE, NTUA

2008 – 2011 **3rd Lyceum of New Heraklion, Attika**, *General Lyceum Graduation*.
- General Graduation Grade 19.7/20
- General Panhellenic Examinations Grade 19.24/20, top 1% nationwide

Industrial Research Experience

Aug 2018 – Jul 2020 **Deeplab**, *Machine Learning Engineer*, Athens.
- Research on scene graph generation, in collaboration with Prof. Maragos' lab at NTUA.
- Built an interactive demo of scene graph generation on videos.
- Developed the backend of this webpage for real-time inference of visual relationships on wild images.

Mar 2017 – Jul 2018 **METIS Cybertechnology S.A.**, *Artificial Intelligence Engineer*, Athens.
- Designed and developed the whole natural language processing pipeline behind METIS's textbot.
- Developed several applications and APIs for METIS's products.

Research Collaborations with Academic Institutions

Nov 2019 – Jan 2020 and Apr – Jun 2020 **Stanford University, Leonidas Guibas Lab**, Stanford, CA, USA, (remotely).
- Worked with Panos Achlioptas on fine-grained language grounding and shape deformation. Recommendation can be provided by Panos.

Dec 2019 – Feb 2020 **TU Darmstadt, Intelligent Autonomous Systems Group**, Germany, (remotely).
- Worked with Dr. Georgia Chalvatzaki on improving tensor representations for grasping point detection. Recommendation can be provided by Georgia.

Aug 2018 – Aug 2020 **Computer Vision and Signal Processing Lab, NTUA**, Athens, Greece.
- Research on high-level semantic image representation, with application to scene graph generation, in collaboration with Deeplab.

Publications

2020 **From Saturation to Zero-Shot Visual Relationship Detection Using Local Context**. Gkanatsios N., Pitsikalis V., Maragos P., *BMVA British Machine Vision Conference, BMVC 2020.* PDF Code

2020 **Revisiting Grasp Map Representation with a Focus on Orientation in Grasp Synthesis**. Gkanatsios N., Chalvatzaki G., Maragos P., Peters J., *Visual Learning and Reasoning for Robotic Manipulation, RSS Workshop.* PDF

2019 **Attention-Translation-Relation Network for Scalable Scene Graph Generation**. Gkanatsios N., Pitsikalis V., Koutras P., Maragos P., *IEEE International Conference on Computer Vision Workshops, ICCVW 2019.* PDF Code

2019 **Showcasing Deeply Supervised Multimodal Attentional Translation Embeddings: A Demo for Visual Relationship Detection**. Gkanatsios N., Pitsikalis V., Koutras P., Zlatintsi A., Maragos P., *IEEE International Conference on Image Processing, ICIP 2019.* IEEExplore Link

2019	**Deeply Supervised Multimodal Attentional Translation Embeddings for Visual Relationship Detection**. Gkanatsios N., Pitsikalis V., Koutras P., Zlatintsi A., Maragos P., *IEEE International Conference on Image Processing, ICIP 2019.* PDF Code
2018	**Metis: A Scalable Natural-Language-Based Intelligent Personal Assistant for Maritime Services**. Gkanatsios N., Mermikli K., Katsikas S., *24th International Conference on Information and Software Technologies (ICIST 2018).* Springer Link

Talks / Oral Presentations

Sep 2019	**ICIP 2019**, Taipei, Taiwan: oral presentation of the paper "Deeply Supervised Multimodal Attentional Translation Embeddings for Visual Relationship Detection".
Oct 2018	**ICIST 2018**, Vilnius, Lithuania: oral presentation of the paper "Metis: A Scalable Natural-Language-Based Intelligent Personal Assistant for Maritime Services".
Jun 2018	**VOXXEDDAYS Athens**, Greece: A Scalable Maritime Platform Providing Services Through an NLP-Based Intelligent Personal Assistant

Teaching Experience

Sep 2019 – Sep 2020	**CVSP Teaching Assistant**, Athens.
	○ I co-supervised an undergraduate student's diploma thesis on visual relationship detection, together with Prof. Petros Maragos.

Honors and Awards

2018	**Georgios Kontaxis Award** for being the 1st in 2017 class in Electronics and Systems major, ECE NTUA.
2018	**Christos Chalkias Award** for being the 1st in 2017 class in Electronics and Systems major, ECE NTUA.
2017	**EESTECH Challenge Athens 1st Prize** for winning the Machine Learning Hackathon, hold by EESTEC Athens and ECE NTUA.
2012	**Hellenic Physical Society** Award for making the top 10 in the final round of the Panhellenic Physics Competition for high-school students on a nationwide level.
2010 – 2011	**Awards from Hellenic Police** for excellence in high-school classes.

Other Projects

I have run multiple projects on Intelligent Systems, Robotics and Electronics. Some of them can be viewed in my personal webpage https://nickgkan.github.io.

Research Interests

Computer Vision, Machine Learning, Interpretable AI, Robotics

Visual Commonsense, Scene Graph Parsing, Vision-Language Inference, Low-Shot Learning

Programming

(Experienced) Python, Matlab / (Basic) C, Javascript (NodeJS), SQL / PyTorch

Languages

Greek (Native), English (Michigan Certificate of Proficiency in English), French (Delf B1)

Personal

Basketball, drumming (self-taught), bass guitar (self-taught), ancient Greek literature, music transcription, Greek traditional dancing.