

## Education

- 2020 – **Carnegie Mellon University, Robotics Institute**, PhD Student.  
Present
  - Advisor: [Katerina Fragkiadaki](#), Assistant Professor, MLD, CMU
  - Research on Continual Learning for Vision and Robotics
- 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

## Research Collaborations with non-Academic Institutions

- Jan 2022 – **Microsoft Turing Academic Program (MS-TAP)**.  
Present
  - CMU-MSTAP project *"Learning instructible visuo-motor agents through multimodal interactive teaching"*
- Dec 2021 – **Amazon Alexa Prize SimBot Challenge**.  
Apr 2023
  - Developing an embodied conversational agent as member of the CMU team Symbiote.

## Research Collaborations with Academic Institutions

- Nov 2019 – **Stanford University, Leonidas Guibas Lab**, Stanford, CA, USA, (remotely).  
Jan 2020 and Apr – Jun 2020
  - Worked with Panos Achlioptas on fine-grained language grounding and shape deformation. Recommendation can be provided by [Panos](#).
- Dec 2019 – **TU Darmstadt, Intelligent Autonomous Systems Group**, Germany, (remotely).  
Feb 2020
  - Worked with Dr. Georgia Chalvatzaki on improving tensor representations for grasping point detection. Recommendation can be provided by [Georgia](#).
- Aug 2018 – **Computer Vision and Signal Processing Lab, NTUA**, Athens, Greece.  
Aug 2020
  - Research on high-level semantic image representation, with application to scene graph generation, in collaboration with Deeplab.

## Industrial Research Experience

- Aug 2018 – **Deeplab, Machine Learning Engineer**, Athens.  
Jul 2020
  - 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 – **METIS Cybertechnology S.A.**, Artificial Intelligence Engineer, Athens.  
Jul 2018
  - Designed and developed the whole natural language processing pipeline behind METIS's textbot.
  - Developed several applications and APIs for METIS's products.

## Publications

- 2023 **Analogy-Forming Transformers for Few-Shot 3D Parsing**. [Gkanatsios N.\\*](#), Singh M.\*, Fang Z., Tulsiani S., Fragkiadaki K., *International Conference on Learning Representations, ICLR 2023*. [PDF Website](#)
- 2023 **Energy-based Models are Zero-Shot Planners for Compositional Scene Rearrangement**. [Gkanatsios N.\\*](#), Jain A\*, Zhou X., Zhang Y., Atkeson C., Fragkiadaki K., *Robotics Science and Systems, RSS 2023*. [PDF Website](#)

- 2023 **Unifying Diffusion Models with Action Detection Transformers for Multi-task Robotic Manipulation.** Zhou X.\*, [Gkanatsios N.\\*](#), Gervet T.\*, Fragkiadaki K., *Conference on Robot Learning, CoRL 2023*.
- 2023 **Act3D: Infinite Resolution Action Detection Transformer for Robot Manipulation.** Gervet T.\*, Zhou X.\*, [Gkanatsios N.](#), Fragkiadaki K., *Conference on Robot Learning, CoRL 2023*.
- 2022 **Bottom Up Top Down Detection Transformers for Language Grounding in Images and Point Clouds.** Jain A.\*, [Gkanatsios N.\\*](#), Mediratta I., Fragkiadaki K., *European Conference on Computer Vision, ECCV 2022*. [PDF Code](#)
- 2021 **Grounding Consistency: Distilling Spatial Common Sense for Precise Visual Relationship Detection.** Diomataris M., [Gkanatsios N.](#), Pitsikalis V., Maragos P., *IEEE International Conference on Computer Vision, ICCV 2021*. [PDF Code](#)
- 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 Code](#)
- 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*. [IEEEExplore 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

- July 2023 **RSS 2023**, Daegu, South Korea: oral presentation of the paper "Energy-based Models are Zero-Shot Planners for Compositional Scene Rearrangement".
- 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

- Jan 2023 – **CMU 16-726 Teaching Assistant**, Pittsburgh.
- May 2023   ◦ Learning-based Image Synthesis, with Prof. Jun-Yan Zhu.
- Sep 2022 – **CMU 16-824 Teaching Assistant**, Pittsburgh.
- Dec 2022   ◦ Visual Learning and Recognition, with Prof. Jun-Yan Zhu.
- Sep 2019 – **CVSP Teaching Assistant**, Athens.
- Sep 2020   ◦ 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.

---

## Research Interests

Computer Vision, Robotics, Natural Language Processing, Embodied AI  
Continual Learning, In-context 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, drums (self-taught), bass guitar (self-taught), ancient Greek literature, music transcription, Greek folk dancing.