



























<b>CONTACT INFORMATION</b>	<ul style="list-style-type: none"><li>▪ <b>Email:</b> <a href="mailto:vaghat@seas.upenn.edu">vaghat@seas.upenn.edu</a> </li><li>▪ Webpage  / Google Scholars  / LinkedIn  / Twitter  / Github </li></ul>
<b>RESEARCH INTERESTS</b>	Geometric Deep Learning, Equivariant representations, Optimization on Manifolds, Robotics, Generative Models, Differential Geometry, AI for Science and Engineering
<b>EDUCATION</b>	<p><b>University Of Pennsylvania (UPenn)</b> <span style="float: right;"><b>Sep 2018- May 2024</b></span></p> <ul style="list-style-type: none"><li>▪ <b>PhD</b> in Computer and Information Science<ul style="list-style-type: none"><li>• Specialization: Geometric Deep Learning, Computer Vision</li><li>• Advisor: Kostas Daniilidis </li></ul></li><li>▪ <b>Master</b> in Statistics and Data Science (Wharton) <span style="float: right;"><b>Jan 2023-May 2024</b></span><ul style="list-style-type: none"><li>• <b>Current GPA:</b> 4.00/4.00</li><li>• Relevant Coursework: Statistical Machine Learning, High-dimensional Statistics, Time-Series Forecasting, Stochastic Processes, Conformal Prediction</li></ul></li><li>▪ <b>Master of Engineering</b> in Robotics (GRASP Laboratory) <span style="float: right;"><b>Sep 2020- Dec 2022</b></span><ul style="list-style-type: none"><li>• <b>GPA:</b> 4.00/4.00</li><li>• Relevant Coursework: Convex Optimization, Learning in Robotics, Machine Perception, Advanced Machine Perception, Principles of Deep Learning, Theory of Computation</li></ul></li></ul> <p><b>National Technical University of Athens (NTUA), Greece</b> <span style="float: right;"><b>Sep 2012- Sep 2018</b></span></p> <ul style="list-style-type: none"><li>▪ <b>BSc &amp; MSc</b> in Electrical and Computer Engineering (5-year joint degree; 300 ECTS)<ul style="list-style-type: none"><li>• <b>GPA:</b> 9.58/10.0 (top 1% among graduate class of 341 students; highest honors)</li><li>• <b>Major GPA:</b> 9.64/10.0 (top 1%) Specialization: Computer Science</li><li>• Relevant Coursework: Computer Vision, Stochastic Processes, Pattern Recognition, Deep Learning, Advanced Algorithms, Algorithmic Machine Learning, Spectral Graph Theory, Social Network Analysis</li><li>• Undergraduate Thesis: “<i>Spectral Graph Methods with Applications in Computer Vision</i>”  (Greek) Advisor: Petros Maragos </li></ul></li></ul>
<b>HONORS&amp; AWARDS</b>	<ul style="list-style-type: none"><li>▪ <b>Outstanding Paper Award in Multi-Robot Systems</b> <span style="float: right;">ICRA 2023.</span> Paper: <a href="#">Graph Neural Networks for Multi-Robot Active Information Acquisition</a>.</li><li>▪ <b>Gerondelis Foundation Graduate Scholarship</b> <span style="float: right;">2022.</span> Awarded for academic excellence to support Ph.D. Studies.</li><li>▪ <b>Thomaideion Award</b> <span style="float: right;">2016, 2018.</span> Awarded for highest grade among all students of Electrical and Computer Engineering in academic years 2015-2016 and 2017-2018.</li><li>▪ <b>Kritikos Award</b> <span style="float: right;">2017.</span> Awarded for highest grade in all courses of Mathematics among fellow students for the academic year 2016-2017.</li><li>▪ <b>Papakyriakopoulos Award</b> <span style="float: right;">2016.</span> Awarded for highest grade in all courses of Mathematics among fellow students for years 2015-2016.</li><li>▪ <b>”The Great Moment of Education” Eurobank EFG Award</b> <span style="float: right;">2012.</span> Ranking 1st among fellow students in high school in the National Qualification Exams, 2012.</li></ul>

## PUBLICATIONS

- Robust Point Cloud Registration via Equivariant Representations, S.Pertigkiozoglou\*, E.Chatzipantazis\*, K.Daniilidis. (Under Review)
- Structural Risk Minimization for Learning Nonlinear Dynamics, Charis Stamouli, Evangelos Chatzipantazis, George J Pappas.  ACC 2024.
- SE(3)-Equivariant Attention Networks for Shape Reconstruction in Function Space, E.Chatzipantazis\*, S.Pertigkiozoglou\*, E.Dobriban, K.Daniilidis.    ICLR 2023.
- Graph Neural Networks for Multi-Robot Active Information Acquisition. M.Tzes, N.Bousias, E.Chatzipantazis, G.Pappas. (Outstanding Paper Award in Multi-Robot Systems)    ICRA 2023.
- Learning Augmentation Distributions Using Transformed Risk Minimization, E.Chatzipantazis\*, S.Pertigkiozoglou\*, K.Daniilidis, E.Dobriban.  TMLR 2023.
- Unsupervised Monocular Depth and Latent Structure, K.Chaney\*, B.Bucher\*, E.Chatzipantazis, J.Shi, K.Daniilidis. CVPR Workshop on 3D Scene Understanding for Vision, and Robotics 2019.

## PROFESSIONAL EXPERIENCE

### ▪ University of Pennsylvania (Upenn)

- *Graduate Research Assistant, GRASP Lab, UPenn.* Sep 2018-
  - Conceptualized and implemented an equivariant attention-based neural network for point cloud reconstruction and improved the state-of-the-art by a large margin while achieving zero-shot generalization to real scenes.
  - Conceptualized a mathematical framework for automatic discovery of symmetries in data and implemented a modular and efficient algorithm for recovering and applying useful augmentations while training large neural networks for vision tasks.
  - Implemented a deep network for monocular depth estimation and fused it with IMU measurements using a MSCKF for vision and inertial odometry.
  - Supervisor: Kostas Daniilidis 
- *Teaching Assistant CIS700: Advanced Topics in Geometric Deep Learning,* Spring 2024
  - Lecture on theoretical derivation and practical implementation of  $SE(2)$ ,  $SE(3)$  steerable equivariant networks.
  - Professor: Kostas Daniilidis , Jean Gallier 
- *Teaching Assistant CIS680: Advanced Machine Perception,* Spring 2019
  - Designed MaskRCNN implementation from scratch and curated COCO dataset.
  - Website 
  - Professor: Jianbo Shi 
- *Teaching Assistant ESE546: Principles of Deep Learning,* Spring 2019, 2020
  - Co-authored course material in PAC-learning and Markov Chains.
  - Class Notes 
  - Professor: Pratik Chaudhari 
- *Teaching Assistant ESE650: Learning in Robotics,* Fall 2019
  - Designed assignment on Partially Observable Markov Decision Processes (POMDP).
  - Professor: Kostas Daniilidis 
- **National Technical University of Athens,** Sep 2017- Sep 2018
  - *Undergraduate Research Assistant, Computer Vision and Signal Processing (CVSP) Lab.*
    - Scaled up spectral graph algorithms for image segmentation and extended previous methods by incorporating user-defined hard constraints.
    - Supervisor: Petros Maragos 

**ACADEMIC SERVICE**

- Invited Speaker in CVPR 2024 workshop on *Equivariant Vision: From Theory to Practice*: Talk on practical and theoretical aspects of equivariant deep learning.
- Machine Learning Conference Reviewer: ICML 2022, ICML 2023, NeurIPS 2022, ICML 2024.
- Computer Vision Conference Reviewer: ICCV 2023.
- Robotics Conference Reviewer: ICRA 2023.

**LANGUAGES**      **Greek:** Native language. **English:** fluent. **French:** novice

**TECHNICAL SKILLS**

- **Programming Languages**
  - Current Frequent Use: Python
  - Past Frequent Use: C, C++, Java, Prolog, SMLNJ, MATLAB, HTML5, Javascript, PHP, mySQL
- **Other Programming Skills**
  - PyTorch, Parallel & GPU Programming , Github, L<sup>A</sup>T<sub>E</sub>X, Unix Kernel programming, bash scripting

**OTHER INTERESTS**      Competitive Swimming (7 years), Water Polo (3 years), Tennis (3 years), Guitar(self-taught)

**REFERENCES (UPON REQUEST)**

<b>Kostas Daniilidis</b>	Ruth Yalom Stone Professor UPenn 
<b>Edgar Dobriban</b>	Associate Professor of Statistics and Data Science Wharton 
<b>Pratik Chaudhari</b>	Assistant Professor UPenn 