

Despoina Paschalidou

PostDoc at the Geometric Computation Group, Stanford University

🏠 Mountain View, USA 📧 despoina_paschalidou ✉ despoina.paschalidou@tue.mpg.de
👤 paschalidoud.github.io 🔗 <https://scholar.google.de/citations> 🐙 github.com/paschalidoud

Education

Stanford University

Stanford, USA

Postdoctoral Scholar

February 2022 - Present

Advisor: Leonidas Guibas

Topic: Learning Generative Models for Controllable Scene and Object Synthesis

Swiss Federal Institute of Technology Zürich (ETH Zürich)

Zürich, Switzerland

PhD in Information Technology and Electrical Engineering

April 2017 - November 2021

Advisors: Andreas Geiger, Luc van Gool

Topic: Learning Deep Models with Primitive-Based Representations

Aristotle University of Thessaloniki (A.U.Th.)

Thessaloniki, Greece

Diploma in Electrical and Computer Engineering (ECE)

October 2009 - October 2015

Advisor: Anastasios Delopoulos

Master Thesis: Event detection on video data with topic modelling algorithms

Research Experience

Stanford University

Stanford, USA

Postdoctoral Researcher

February 2022 - Present

Advisor: Leonidas Guibas

Researching generative models for 3D objects and scenes that enable more control over the appearance, shape and style of the generated content

Facebook AI Research

London, United Kingdom

Research Scientist Intern

July 2021 - October 2021

Advisor: David Novotny, Andrea Vedaldi

Researching unsupervised 3D reconstruction of single-view images.

NVIDIA AI Research

Toronto, Canada

Research Scientist Intern - Deep Learning

August 2020 - June 2021

Advisor: Sanja Fidler

Researching generative models for realistic synthetic scene generation of indoor and outdoor environments. We built an interactive tool for scene completion, scene rearrangement, object proposal, failure case correction etc.

ETH Zürich

Zürich, Switzerland

Graduate Research Assistant

February 2019 - November 2021

Advisors: Andreas Geiger, Luc van Gool

Researching interpretable primitive-based representations, representations for higher-level relationships, deep learning and single-view 3D reconstruction.

Max Planck Institute for Intelligent Systems

Tübingen, Germany

Graduate Research Assistant

April 2017 - February 2019

Advisors: Andreas Geiger, Luc van Gool

Researching interpretable primitive-based representations, representations for higher-level relationships, deep learning and single-view 3D reconstruction.

Aristotle University of Thessaloniki (A.U.Th.)

Graduate Research Assistant

Thessaloniki, Greece

November 2015 - September 2016

Advisors: Anastasios Delopoulos, Christos Diou

Developed a novel variational inference method for the supervised Latent Dirichlet Allocation (LDA) that outperformed other topic modelling algorithms both in terms of speed and classification accuracy.

Aristotle University of Thessaloniki (A.U.Th.)

Senior programmer and team leader of P.A.N.D.O.R.A.'s Computer Vision team

Thessaloniki, Greece

December 2013 - July 2015

Advisors: Loukas Petrou, Andreas Symeonidis

Implemented and developed various computer vision algorithms for our experimental robotic platform that was participating on the RoboCup Rescue competition.

Publications

- [1] Konstantinos Tertikas, **Despoina Paschalidou**, Boxiao Pan, Jeong Joon Park, Mikaela Angelina Uy, Ioannis Emiris, Yannis Avrithis, Leonidas Guibas. "PartNeRF: Generating Part-Aware Editable 3D Shapes without 3D Supervision", CVPR 2023
- [2] Zhen Wang, Shijie Zhou, Jeong Joon Park, **Despoina Paschalidou**, Suyu You, Gordon Wetzstein, Leonidas Guibas, Achuta Kadambi. "ALTO: Alternating Latent Topologies for Implicit 3D Reconstruction", CVPR 2023
- [3] **Despoina Paschalidou**, Amlan Kar, Maria Shugrina, Karsten Kreis, Andreas Geiger, Sanja Fidler. "ATISS: Autoregressive Transformers for Indoor Scene Synthesis", NeurIPS 2021
- [4] **Despoina Paschalidou**, Angelos Katharopoulos, Andreas Geiger, Sanja Fidler. "Neural Parts: Learning Expressive 3D Shape Abstractions with Invertible Neural Networks", CVPR 2021
- [5] **Despoina Paschalidou**, Luc van Gool, Andreas Geiger. "Learning Unsupervised Hierarchical Part Decomposition of 3D Objects from a Single RGB Image", CVPR 2020
- [6] **Despoina Paschalidou**, Ali Osman Ulusoy, Andreas Geiger. "Superquadrics Revisited: Learning 3D Shape Parsing beyond Cuboids", CVPR 2019
- [7] Aseem Behl, **Despoina Paschalidou**, Simon Donne, Andreas Geiger. "PointFlowNet: Learning Representations for 3D Scene Flow Estimation from Point Clouds", CVPR 2019
- [8] **Despoina Paschalidou**, Ali Osman Ulusoy, Carolin Schmitt, Luc van Gool, Andreas Geiger. "RayNet: Learning Volumetric 3D Reconstructions with Ray Potentials", CVPR 2018 (**Spotlight talk**)
- [9] **Despoina Paschalidou**^{*}, Angelos Katharopoulos^{*}, Christos Diou, Anastasios Delopoulos (^{*} equal contribution) "Learning local feature aggregation functions with backpropagation", EUSIPCO 2017
- [10] Angelos Katharopoulos^{*}, **Despoina Paschalidou**^{*}, Christos Diou and Anastasios Delopoulos (^{*} equal contribution), "Fast Supervised LDA for Discovering Micro-Events in Large-Scale Video Datasets", ACM International Conference on Multimedia 2016

Technical Skills

- **Programming Languages:** C, C++, Python, Java, Matlab, bash
- **Parallel and Distributed Computing:** NVIDIA CUDA, MPI
- **Deep Learning Frameworks:** TensorFlow, Keras, PyTorch
- **Software Testing:** googletest, unittest
- **Build Automation:** CMake, GNU Make

- **Robotics Software:** ROS (Robot Operating System), Gazebo, rviz
- **Grid Infrastructure:** Sun Grid Engine, Google Compute Engine, HTCCondor
- **Microcontrollers Programming:** Atmel AVR Assembly, Arduino
- **Others:** OpenCV, VLFeat, Android, HTML, CSS, Git, L^AT_EX

Open-Source Projects

- 2019 - Present **Co-creator of simple-3dviz** <https://simple-3dviz.com>
simple-3dviz is a lightweight and easy-to-use library that provides an easy interface for visualizing 3D objects with hundreds of thousands of vertices efficiently.
- 2019 - Present **Creator of superquadric_parsing** <http://superquadrics.com>
superquadric_parsing is a python library developed to accompany our CVPR 2019 publication. This library seeks to provide an easy interface to represent various 3D models using superquadric surfaces.
- 2018 - Present **Creator of raynet-mvs** <http://raynet-mvs.com>
raynet-mvs is a python library developed to accompany our CVPR 2018 publication. This library provides an easy interface to experiment with various architectures for 3D Reconstruction given a set of images and their corresponding camera poses.
- 2016 - Present **Co-creator of LDA++** <http://ldaplusplus.com>
LDA++ is a C++ library that enables the inference of various Latent Dirichlet Allocation (LDA) models. This library aims to allow fast and easy experimentation with the variational inference procedure.

Teaching Experience

- Spring 2023: **Neural Representations and Generative Models for 3D Geometry**, Stanford University (Teaching Assistant)
- Spring 2022: **Geometric and Topological Data Analysis**, Stanford University (Teaching Assistant)
- Spring 2018: **Machine Learning in Graphics and Vision**, University of Tübingen (Teaching Assistant)

Academic Service

- **Reviewer:** CVPR 2019-2023; ICCV 2019, 2021, 2023; ECCV 2020, 2022; SIGGRAPH 2019, 2022, 2023; SIGGRAPH ASIA 2019, 2021; NeurIPS 2020,2022; PAMI 2019-2023; ICML 2021-2022

Distinctions

- CIFE Seed Research Project, \$87,167** June 2022
Stanford, Center for Integrated Facility Engineering
- Outstanding Reviewer Award** June 2022
International Conference on Computer Vision and Pattern Recognition (CVPR), New Orleans
- Postdoc.Mobility Grant, CHF 126,000** December 2021
Swiss National Science Foundation
- Outstanding Reviewer Award** June 2021
International Conference on Computer Vision and Pattern Recognition (CVPR), virtual
- Facebook Fellowship Finalist** January 2020
Facebook

Ranked 2nd among the Electrical and Computer Engineer graduates Aristotle University of Thessaloniki, Greece	October 2015
2nd place in the RoboCup Rescue Robot League with Team P.A.N.D.O.R.A. RoboCup, Hefei, China	July 2015
8th place in Greece in the IEEEExtreme Programming Competition IEEE Computer Society	October 2014
13th place in Greece the IEEEExtreme Programming Competition IEEE Computer Society	October 2013
2nd place in the RoboCup Rescue Robot League with Team P.A.N.D.O.R.A. RoboCup, Eindhoven, Netherlands	July 2013