

Tetiana Martyniuk

COMPUTER VISION RESEARCHER, PHD CANDIDATE

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Education

École des Mines de Paris - Université PSL (Astra-vision group at Inria & Valeo.ai)

Paris, France

PH.D. IN COMPUTER SCIENCE, EXPECTED GRADUATION DATE - DECEMBER 2026

Dec. 2023 - present

- **Thesis topic:** *Conditional generation of egocentric 3D driving scenes.*

Supervisors: [Dr. Alexandre Boulch](#), [Dr. Gilles Puy](#), [Dr. Renaud Marlet](#) and [Dr. Raoul de Charette](#).

Ukrainian Catholic University

Lviv, Ukraine

M.SC. IN COMPUTER SCIENCE WITH SPECIALIZATION IN DATA SCIENCE

Sep. 2017 - Feb. 2019

- **Thesis:** *Multi-task learning for image restoration*, supervisor: [Orest Kupyn](#).

Ivan Franko National University of Lviv

Lviv, Ukraine

B.SC. IN MATHEMATICS WITH SPECIALIZATION IN GEOMETRY & TOPOLOGY (WITH HONORS)

Sep. 2013 - Jun. 2017

- **Thesis:** *S-dimension versus Hölder dimension in Peano continua*, supervisor: [Prof. Taras Banakh](#).

Selected publications & Patents

Exploring Easy Boosts for Lidar Semantic Scene Completion

[Tetiana Martyniuk](#), [Jonathan Seele](#), [Alexandre Boulch](#), [Gilles Puy](#), [Renaud Marlet](#), [Raoul de Charette](#)

ICIP 2026

LiDPM: Rethinking Point Diffusion for LiDAR Scene Completion (Oral Presentation)

[Tetiana Martyniuk](#), [Gilles Puy](#), [Alexandre Boulch](#), [Renaud Marlet](#), [Raoul de Charette](#)

IV 2025

DAD-3DHeads: A Large-scale Dense, Accurate and Diverse Dataset for 3D Head Alignment from a Single Image

[Tetiana Martyniuk](#), [Orest Kupyn](#), [Yana Kurylyak](#), [Igor Krashenyi](#), [Jiří Matas](#), [Viktoriia Sharmanska](#)

CVPR 2022

FEAR: Fast, Efficient, Accurate and Robust Visual Tracker

[Vasyl Borsuk](#), [Roman Vei](#), [Orest Kupyn](#), [Tetiana Martyniuk](#), [Igor Krashenyi](#), [Jiří Matas](#)

ECCV 2022

DeblurGAN-v2: Deblurring (Orders-of-Magnitude) Faster and Better

[Orest Kupyn](#), [Tetiana Martyniuk](#), [Junru Wu](#), [Zhangyang Wang](#)

ICCV 2019

Information compression method and apparatus

[Vladyslav Zavadskyi](#), [Tetiana Martyniuk](#)

US12198391B2, 2025

Kuratowski monoids of n-topological spaces

[Taras Banakh](#), [Ostap Chervak](#), [Tetyana Martyniuk](#), [Maksym Pylypovych](#), [Alex Ravsky](#), [Markiyany Simkiv](#)

Topol. Algebra Appl.,
2018

Professional experience

valeo.ai & Inria

Paris, France

RESEARCHER (PHD CONTRACT)

Jun. 2023 - present

Working on 3D scene understanding tasks, e.g., (semantic) scene completion and multi-modal generation for outdoor driving scenes.

Piñata Farms

Lviv, Ukraine / remote

COMPUTER VISION RESEARCH ENGINEER

Dec. 2020 - Sep. 2022

- "3D Heads" project research lead.

Managed the end-to-end research lifecycle from data collection and labeling curation to benchmarking and model integration. Designed a family of models (server-side, edge-device) for dense 3D head alignment that transitioned the company's core technology from 2D to 3D, enabling new product features like high-fidelity Face Reenactment. Resulted in a CVPR paper and widely used open-source dataset.

- **Information Retrieval** project: user behaviour data analysis, search and retrieval experiments, video content auto-tagging pipelines.

NeoRender (now Zibra AI)

Kyiv, Ukraine

DEEP LEARNING RESEARCHER

Oct. 2019 - Dec. 2020

- Developed *efficient and generic neural 3D object representations* using signed distance fields (SDFs). Resulted in 1 US Patent.
- Built differentiable pipelines for *mesh-to-SDF prediction* and one-shot *mesh and pointcloud decomposition* models.

Machine Learning Lab, Ukrainian Catholic University

Lviv, Ukraine

RESEARCHER

Feb. 2019 - May 2023

- **Selected projects:** 3D Dense Head Alignment from a Single Image, Visual Object Tracking, Single Image Blind Motion Deblurring via GANs.
- Mentored for Bachelor's theses at the Faculty of Applied Sciences, UCU.

Let's Enhance

COMPUTER VISION RESEARCHER

Kyiv, Ukraine
Aug. 2018 - Sep. 2019

- **Image and video restoration via GANs:** led *super-resolution, color and tone enhancement, noise removal* research projects.

ELEKS

DATA SCIENTIST

Lviv, Ukraine
Dec. 2017 - Jul. 2018

- **Selected projects:** optical character recognition, anomaly detection, knowledge graph creation, NLP projects (legal and finance domains).

Teaching

Faculty of Applied Sciences, Ukrainian Catholic University

LECTURER, DEPARTMENT OF COMPUTER SCIENCES AND IT

Lviv, Ukraine / remote
2016 - 2018, 2020 - present

- **Lecturer,** Computer Vision specialization
 - 2022-present: Introduction to Deep Learning in Computer Vision,
 - 2020-2021: Generative Modeling & Image Restoration.
- **TA** (2016 - 2018): Algorithms and Data Structures, Linear Algebra, Probability and Statistics.

Lviv Polytechnic University & Yuriy Fedkovych Chernivtsi National University

GUEST LECTURER

Ukraine / remote
2023 - 2025

- "Introduction to Deep Learning in Computer Vision" lectures.

Lviv Physics and Mathematics Lyceum

CO-ORGANIZER OF THE MATHEMATICAL OLYMPIAD WORKSHOP FOR PUPILS

Lviv, Ukraine
Jul. 2013 - Mar. 2017

- Trainer for Mathematical Olympiads, each year resulting in having a candidate for International Mathematical Olympiad from Ukraine.

Awards & Honors

- 2026 **Outstanding Reviewer,** CVPR
- 2017-2019 **Scholarships for M.Sc. studies** granted by Grammarly and Ukrainian Catholic University
- 2016 **3rd Award,** National Student Olympiad in Mathematics
- 2013-2014 **Scholarship of the President of Ukraine,** 1 of 35 recipients nationwide
- 2013 **1st Prize,** Minor Academy of Sciences of Ukraine (national research competition)
- 2010-2013 **3rd Award,** National Mathematical Olympiad

Selected Talks

- 06/2025 **LiDPM: Rethinking Point Diffusion for LiDAR Scene Completion,** Oral presentation, IEEE IV Symposium, *Cluj-Napoca, Romania.*
- 06/2024 **DAD-3DHeads: the Dataset, Benchmark, and Applications,** ELLIS Workshop: 3D Computer Vision and Robotics, *Remote.*
- 08/2022 **DAD-3DHeads: A Large-scale Dense, Accurate and Diverse Dataset for 3D Head Alignment from a Single Image,** Invited talk at ETH AIT lab, *Remote.*
- 11/2019 **Image Restoration with GANs,** Computer VISIONers Conference, *Kyiv, Ukraine.*

Selected Certifications & Schools

- 2024 **ELLIS Winter School on Foundation Models.** *ELLIS & UvA (the Netherlands)*
- 2017-2018 **Lviv Data Science Summer School,** *specialization in NLP(2017) and CV (2018).* *UCU (Ukraine)*
- 2018 **Lviv Data Science Winter School,** *specialization in Time Series & Forecasting.* *UCU (Ukraine) & CTU (Czech Republic)*
- 2017 **Winter School in Abstract Analysis,** *section "Set Theory&Topology".* *Hejnice (Czech Republic)*
- 2016-2017 **International Joint Certificate Program "Selected Topics in Computational Mathematics".** *Lviv University (Ukraine) & JMU (Germany)*

Skills

- Deep Learning & (3D) Vision** PyTorch, MinkowskiEngine, torchsparse, Open3D, PyTorch3D, trimesh, OpenCV, numpy, scipy.
- Research expertise** Diffusion models, GANs, 3D neural representations, LiDAR processing.
- Other** Docker, SLURM, Git, LaTeX.
- Languages** English (fluent), Ukrainian (native), French (basic).

Professional Services & Affiliations

- Conference & Journal Reviewer:** CVPR (2023, 2026), ECCV (2024, 2026), IEEE IV 2025, WACV 2026, CVIU.
- Associate Unit Member,** ELLIS Associate Unit in Lviv.