Orest Kupyn

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Computer Vision Researcher • 4,000+ Citations • 10+ Years Scaling ML from Research to Production • Oxford VGG & Google Research

Summary

PhD researcher at the Visual Geometry Group (Oxford) and Google Research (ELLIS Industry PhD) specializing in generative models, synthetic data generation, and 3D/video generation. Combined frontier research (4,000+ citations, published at top-tier venues, 2.6k⋆ open-source tools) with 10+ years of engineering experience including founding a regional ML office, building research teams from scratch, and deploying computer vision systems serving millions of users at production scale.

Education

- **University of Oxford — Visual Geometry Group** — Oxford, United Kingdom
  DPhil in Engineering Science (ELLIS Industry PhD with Google Research) — *Oct 2023 — Present*
  - Research on generative models for geometric video generation, synthetic data, and 3D scene generation. Supervised by Prof. Christian Rupprecht. Industrial co-supervision at Google Research by Dr. Federico Tombari
- **Ukrainian Catholic University** — Lviv, Ukraine
  M.Sc. in Computer Science — Data Science Specialization — *2016 — 2017*
- **Lviv National University** — Lviv, Ukraine
  B.Sc. in Computer Science — Information Systems — *2012 — 2016*

Industry Experience

- **Google Research** — Zurich, Switzerland
  ELLIS Industry PhD Researcher — *Jan 2026 — Present*
  - **Scene Generation**: Research on simulation-ready, geometrically accurate 3D scene generation.
- **PiñataFarms** (backed by Index Ventures & Founders Fund) — Lviv, Ukraine
  Founding Engineer & Research Lead — *May 2019 — Oct 2023*
  - **Founding-Stage Leadership**: Second engineer at the company. Set up and opened the company's regional engineering office in Ukraine. Defined technical vision and architecture for all ML systems. Grew the office from 2 to 50+ employees.
  - **ML Research Team**: Built and led 10-person ML research team from scratch. Established in-house data labeling pipeline and acquisition capabilities. Research initiatives resulted in publications at top-tier conferences (CVPR, ECCV) while simultaneously serving production traffic.
  - **Production Computer Vision Platform**: Architected end-to-end real-time computer vision pipeline: 3D Head Reconstruction, Head Segmentation, Real-Time Object Tracking, Interactive Segmentation, and content recommendation. Served millions of monthly active users.
- **SoftServe** — Lviv, Ukraine
  Senior Research Engineer — *Aug 2018 — May 2019*
  - **Google Partnership**: Led development of seismic data segmentation and horizon detection module as subcontractor for Google Oil and Gas Platform.
- **WANNABY** (Acquired by FarFetch) — Minsk, Belarus
  Research Engineer — *Mar 2018 — Aug 2018*
  - **AR Computer Vision**: Developed GAN-based texture recoloring models for AR try-on applications and 3D foot reconstruction algorithms deployed in consumer mobile apps.
- **Eleks, SoftServe, Vakoms** — Lviv, Ukraine
  Software Engineer — *May 2013 — Apr 2018*
  - **ML & Mobile Applications**: Satellite imagery segmentation for agriculture, text analysis platforms for manufacturing, iOS development for enterprise videoconferencing.

Selected Publications

- **FLAT: Feedforward Latent Triangle Splatting for Geometrically Accurate Scene Generation**. O. Kupyn, G. Bhat, P. Henzler, F. Manhardt, C. Rupprecht, F. Tombari. *Preprint, 2026.*
- **MMDiff: Extending Diffusion Transformers for Multi-Modal Generation**. Y. Akarken, O. Kupyn, C. Rupprecht. *ECCV 2026.*
- **VGGRPO: Towards World-Consistent Video Generation with 4D Latent Reward**. Z. An, O. Kupyn, T. Uscidda, A. Colaco, K. Ahuja, S. Belongie, M. Gonzalez-Franco, M. Tintore Gazulla. *ECCV 2026.*
- **PoseDreamer: Scalable Photorealistic Human Data Generation with Diffusion Models**. L. Prospero, O. Kupyn, O. Viniavskyi, J. F. Henriques, C. Rupprecht. *Under review, 2026.*

- **Epipolar Geometry Improves Video Generation Models**. O. Kupyn, T. Uscidda, M. Tintore Gazulla, F. Manhardt, F. Tombari, C. Rupprecht. *Under review, 2026.*
- **S3OD: Towards Generalizable Salient Object Detection with Synthetic Data**. O. Kupyn, H. Kataoka, C. Rupprecht et al.. *ICLR 2026.*
- **VGGHeads: A Large-Scale Synthetic Dataset for 3D Human Heads**. O. Kupyn, E. Khvedchenia, C. Rupprecht. *CVPRW 2026.*
- **Dataset Enhancement with Instance-Level Augmentations**. O. Kupyn, C. Rupprecht. *ECCV 2024* — ***Oral Presentation.***
- **FEAR: Fast, Efficient, Accurate and Robust Visual Tracker**. V. Borsuk, R. Vei, O. Kupyn, T. Martyniuk, I. Krashenyi, J. Matas. *ECCV 2022.*
- **DAD-3DHeads: A Large-Scale Dense, Accurate and Diverse Dataset for 3D Head Alignment**. T. Martyniuk, O. Kupyn, Y. Kurlyak, I. Krashenyi, J. Matas, V. Sharmanska. *CVPR 2022.*
- **DeblurGAN-v2: Deblurring (Orders-of-Magnitude) Faster and Better**. O. Kupyn, T. Martyniuk, J. Wu, Z. Wang. *ICCV 2019.*
- **DeblurGAN: Blind Motion Deblurring Using Conditional Adversarial Networks**. O. Kupyn, V. Budzan, M. Mykhailych, D. Mishkin, J. Matas. *CVPR 2018.*

Open Source & Impact

DeblurGAN — 2,600+ GitHub stars, Arctic Code Vault contributor, widely adopted in production. **DAD-3DHeads** — 470+ stars, large-scale dataset and benchmark for 3D head alignment (CVPR 2022). **VGGHeads** — 200+ stars, synthetic dataset for 3D head alignment. **S3OD** — Open-source synthetic data generation pipeline for salient object detection.

Total: **4,000+ Google Scholar citations.**

Technical Skills

Research: Diffusion Models, Video Generation, 3D Reconstruction, DPO/RLHF Alignment, Flow Matching, GANs, Synthetic Data Generation
Engineering: PyTorch, Large-Scale Distributed Training, Real-Time Inference Systems, Production ML Pipelines, Python, C++
Leadership: Founded regional engineering office; built and managed 10-person research team; scaled organization from 2 to 50+

Patents

- **US12361710B2** — System for remixable video content and per-frame metadata capture and playback. C. Carrier, C. Adame, L. Schulte, **O. Kupyn**, A. Hakeem. PiñataFarms Inc., granted 2025.

Honors & Awards

- **Outstanding Reviewer** — CVPR 2026
- **Samsung AI Challenge** — 2nd Place, Samsung Research AI Hackathon for neural image restoration (2018)
- **Queen's Innovation Challenge** — Winner, CAD $20,000 prize for AI plant disease recognition (2017)
- **Data Science Game** — International Finalist, ML & Data Science competition, Paris (2017)