Luca Morreale

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Education

2019 – 2024	**Ph.D., University College London** Computer science Thesis title: *Neural Surfaces* Advisor: Niloy J. Mitra. Machine Learning for Computer Graphics
2015 – 2017	**M.Sc., Politecnico di Milano** in Computer Engineering. Computer Vision and Robotics perception
2012 – 2015	**B.Sc., Politecnico di Milano** in Computer Engineering. Software engineering

Experience

2024 -	**Samsung Research**, Full time employee Research on Generative Models
2023	**Meta Reality Labs**, Research intern Led research on scene geometry manipulation through natural language Transformers and LLM
2021	**Adobe Research**, Research intern Led research on CNN-based shape representation Focused on shape compression, deformation, and editing Published paper at CVPR 2022
2019	**Università della Svizzera Italiana**, Research Assistant Led research on geometric deep learning for point clouds Specialized in point cloud classification and correspondence
2018 – 2019	**Politecnico di Milano**, Research Assistant Led research on real-time 3D reconstruction semantic simplification Deep learning

Research Publications

- **Upcycling Text-to-Image Diffusion Models for Multi-Task Capabilities**
  R. Chavhan, A. Mehrotra, M. Chadwick, A. G. C. P. Ramos, **L. Morreale**, M. Noroozi, and S. Bhattacharya
  International Conference on Machine Learning (ICML).

- **Edit: Efficient diffusion transformers with linear compressed attention**
  P. Becker, A. Mehrotra, R. Chavhan, M. Chadwick, **L. Morreale**, M. Noroozi, A. Gil CP Ramos, and S. Bhattacharya
  Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV) 2025.

- **FraQAT: Quantization Aware Training with Fractional bits**
  L. Morreale, A. G. C. Ramos, M. Chadwick, M. Noroozi, R. Chavhan, A. Mehrotra, and S. Bhattacharya
  arXiv preprint arXiv:2510.14823 2025.

- **Guidance Free Image Editing via Explicit Conditioning**
  M. Noroozi, A. G. Ramos, **L. Morreale**, R. Chavhan, M. Chadwick, A. Mehrotra, and S. Bhattacharya
  arXiv preprint arXiv:2503.17593 2025.

- **Neural Semantic Surface Maps**

L. Morreale, N. Aigerman, V. G. Kim, and N. J. Mitra
Computer Graphics Forum Wiley Online Library 2024.

- **Neural convolutional surfaces**
  L. Morreale, N. Aigerman, P. Guerrero, V. G. Kim, and N. J. Mitra
  Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2022.

- **Neural surface maps**
  L. Morreale, N. Aigerman, V. G. Kim, and N. J. Mitra
  Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2021.

- **Dense 3D visual mapping via semantic simplification**
  L. Morreale, A. Romanoni, and M. Matteucci
  International Conference on Robotics and Automation (ICRA) IEEE 2019.

- **Predicting the next best view for 3d mesh refinement**
  L. Morreale, A. Romanoni, and M. Matteucci
  Intelligent Autonomous Systems 15: Proceedings of the 15th International Conference IAS-15 Springer 2019.

- **Learning and mining player motion profiles in physically interactive robogames**
  E. L. Oliveira, D. Orrù, **L. Morreale**, T. P. Nascimento, and A. Bonarini
  Future Internet MDPI 2018.

Patents

- *Neural network based 3D object surface mapping*
  V. Kim, N. Aigerman, N. J. Mitra, and **L. Morreale** US Patent 11,869,132 Jan. 2024.

Awards

2022   **Rabin Ezra scholarship**
The Rabin Ezra Scholarship Trust has been set up to make available bursaries for post-graduate students specializing in computer graphics.

Service

Reviewer for CVPR, NeurIPS, ICML, Computer & Graphics, SIGGRAPH Asia

Teaching

2022   **Acquisition and Processing of 3D Geometry**, University College London

2020 – 2022   **Machine Learning for Visual Computing**, University College London

2018 – 2019   **Computer Science 101**, Politecnico di Milano

Skills

Languages   English, Italian.

Coding   Python, Pytorch, C, C++, LaTeX

Misc   Docker, Blender, Distributed training