

Research Experience

2021- **Research Scientist**, ADOBE, Paris - San Francisco.

Team : Creative Intelligence Lab

Manager : Vova Kim

2020-2021 **Research Scientist**, NAVER LABS, Grenoble.

Team : Humans, Computer Vision

Manager : Gregory Rogez

2019 **Research intern**, ADOBE, San Francisco.

Mentors : Matthew Fisher, Vova Kim, Bryan Russell

Studying the scalability of deep learning approach to 3D object reconstruction to all objects and full 3D scenes.

2017 **Research intern**, ADOBE, San Francisco.

AtlasNet: A Papier-Mâché Approach to Learning 3D Surface Generation

Mentors : Matthew Fisher, Vova Kim, Bryan Russell

Studied the problem of 3D data representation. Showed that continuous space mappings were compatible with neural networks, which opens a spectrum of applications. One of them is the ability to synthesize a 3D mesh from a single 2D image. Presented as a spotlight at CVPR 2018.

2016 **Research intern**, EPFL, BIOMEDICAL IMAGING GROUP, Paris.

Steerable Convolutional Neural Networks for Texture Classification

Mentors : Adrien Depeursinge

Explored, using steerable filters, how to add built-in equivariance to rotations in Deep Networks. Applications to medical images analysis.

2015 **Research intern**, TELECOM PARISTECH, TEAM 3D COMPUTER GRAPHICS, Paris.

Interactive Monte-Carlo Ray-Tracing Upsampling

Mentors : Malik Boughida, Tamy Boubekeur

Designed a rendering algorithm for real-time previsualization. It heavily relies on the Nvidia's parallel rendering framework : OptiX. Presented as a poster at Eurographics 2016.

Education

2016 - 2020 **PhD**, ENPC, IMAGINE-LIGM, Paris.

Advisor : Mathieu Aubry

Learning 3D generation and matching. List of publications and awards online.

2015-2016 **Master of Science in Machine Learning - MVA**, ENS CACHAN, Paris, France.

The MVA is a research oriented master program at the crossroads between computer science and applied mathematics. I specialize in machine learning and computer vision.

2012-2016 **Master of Science in Engineering**, ÉCOLE POLYTECHNIQUE, Palaiseau, France.

Receiving high-level education at the best French engineering school. Acquiring sound and broad scientific knowledge. Specialize in Algorithmics.

Awards

2022 **Prix de thèse Gilles Kahn**, *second place*, Société Informatique de France.

2021 **Best Thesis Award**, *second place*, Association française pour l'Intelligence Artificielle.

2018 **Best Poster Award**, PRAIRIE AI summer school.

Commitments

- 2018 - **Reviewer.**
CVPR 2019 (Outstanding Reviewer), 2020, 2021, 2023, 2024 ICCV 2019, 2023 (Diversity Grant), ECCV 2020, SIGGRAPH 2020, 2024, SIGGRAPH ASIA 2024, Eurographics 2020, IJCV, GRSL
- 2017 - 2018 **Teacher Assistant**, ENPC, Paris.
M1 courses in machine learning and computer vision taught by R. Marlet and G. Obozinski.
- 2013 - 2014 **Teacher assistant in preparatory classes**, LYCÉE STANISLAS, Paris.
Assistant teacher tutoring students for highly competitive exams.
- 2010 - 2011 **Military training and Civil Service**, PARIS FIRESQUAD, Paris.
Full-time officer of the rescue center of Paris northern area, leading rescue missions.

Computer skills and Languages

Main	PYTHON, C++, MATLAB	French	Mothertongue
ML	PYTORCH	English	Fluent - <i>IELTS</i> : 7.5
Others	HTML, CSS, JAVASCRIPT, L ^A T _E X	Spanish	Working knowledge

Interests

- Sports** Hiking, running and cyclism (cycloportives, cyclo-camping).
Dance Salsero de la rumba, de la guaracha y del guaguanco.

Publications

2000 citations, h-index 11, 24 papers (source: Google Scholar)

With Adobe

- [1] Duygu Ceylan et al. "MatAtlas: Text-driven Consistent Geometry Texturing and Material Assignment". In: *arXiv preprint*. 2024.
- [2] Noam Aigerman and Thibault Groueix. "Generative Escher Meshes". In: *arXiv preprint*. 2023.
- [3] Ta-Ying Cheng et al. "Learning Continuous 3D Words for Text-to-Image Generation". In: *Proceedings IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*. 2024.
- [4] Van Nguyen Nguyen, Thibault Groueix, Mathieu Salzmann, and Vincent Lepetit. "GigaPose: Fast and Robust Novel Object Pose Estimation via One Correspondence". In: *Proceedings IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*. 2024.
- [5] Van Nguyen Nguyen, Thibault Groueix, Yinlin Hu, Mathieu Salzmann, and Vincent Lepetit. "NOPE: Novel Object Pose Estimation from a Single Image". In: *Proceedings IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*. 2024.
- [6] Bo Sun, Thibault Groueix, Chen Song, Qixing Huang, and Noam Aigerman. "TutteNet: Injective 3D Deformations by Composition of 2D Mesh Deformations". In: *Proceedings IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*. 2024.
- [7] Kai Yan, Fujun Luan, Miloš Hašan, Thibault Groueix, Valentin Deschaintre, and Shuang Zhao. "PSDR-Room: Single Photo to Scene using Differentiable Rendering". In: *ACM Transactions on Graphics (SIGGRAPH Asia)*. 2023.
- [8] Ta-ying Cheng, Matheus Gadelha, Soeren Pirk, Radomir Mech, Andrew Markham, and Niki Trigoni. "Learning Continuous 3D Words for Text-to-Image Generation". In: *International Conference on Computer Vision (ICCV)*. 2023.

- [9] Dafei Qin, Jun Saito, Noam Aigerman, Thibault Groueix, and Taku Komura. “Neural Face Rigging for Animating and Retargeting Facial Meshes in the Wild”. In: *ACM Transactions on Graphics (SIGGRAPH)*. 2023.
- [10] William Gao, Noam Aigerman, Thibault Groueix, Vladimir G. Kim, and Rana Hanocka. “TextDeformer: Geometry Manipulation using Text Guidance”. In: *ACM Transactions on Graphics (SIGGRAPH)*. 2023.
- [11] Noam Aigerman, Kunal Gupta, Vladimir G Kim, Siddhartha Chaudhuri, Jun Saito, and Thibault Groueix. “Neural Jacobian Fields: Learning Intrinsic Mappings of Arbitrary Meshes”. In: 2022.

With Naver Labs

- [1] Thibault Groueix, Baradel Baradel, Romain Bregier, Yannis Kalantidis, Gregory Rogez, and Philippe Weinzaepfel. “Leveraging MoCap Data for Human Mesh Recovery”. In: *3DV*. 2021.
- [2] Fabien Baradel, Romain Brégier, Thibault Groueix, Philippe Weinzaepfel, Yannis Kalantidis, and Grégory Rogez. “PoseBERT: A Generic Transformer Module for Temporal 3D Human Modeling”. In: 2022.

With Mathieu Aubry

- [1] Tom Monnier, Thibault Groueix, and Mathieu Aubry. “Deep Transformation-Invariant Clustering”. In: *NeurIPS*. 2020.
- [2] Theo Deprelle, Thibault Groueix, Matthew Fisher, Vladimir G Kim, Bryan C Russell, and Mathieu Aubry. “Learning elementary structures for 3D shape generation and matching”. In: *NeurIPS*. 2019.
- [3] Thibault Groueix, Matthew Fisher, Vova Kim, Bryan Russell, and Mathieu Aubry. “Unsupervised cycle-consistent deformation for shape matching”. In: *Symposium on Geometry Processing (SGP)*. 2019.
- [4] Thibault Groueix, Matthew Fisher, Vladimir G. Kim, Bryan Russell, and Mathieu Aubry. “3D-CODED : 3D Correspondences by Deep Deformation”. In: *European Conference on Computer Vision (ECCV)*. 2018.
- [5] Thibault Groueix, Matthew Fisher, Vladimir G. Kim, Bryan Russell, and Mathieu Aubry. “AtlasNet: A Papier-Mâché Approach to Learning 3D Surface Generation”. In: *Proceedings IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*. 2018.

With Tamy Boubekeur

- [1] Malik Boughida, Thibault Groueix, and Tamy Boubekeur. “Interactive Monte-Carlo Ray-tracing Upsampling”. In: *Proceedings of the 37th Annual Conference of the European Association for Computer Graphics: Posters*. 2016.

Workshop

- [1] Van Nguyen Nguyen, Tomáš Hodaň, Georgy Ponimatkin, Thibault Groueix, and Vincent Lepetit. “CNOS: A Strong Baseline for CAD-based Novel Object Segmentation”. In: *ICCV Workshop, BOP challenge*. 2023.
- [2] Theo Deprelle, Thibault Groueix, Matthew Fisher, Vladimir G Kim, Bryan C Russell, and Mathieu Aubry. “Learning elementary structures for 3D shape generation and matching”. In: *NeurIPS*. 2019.
- [3] Marissa Ramirez de Chanlatte, Matheus Gadelha, Thibault Groueix, and Radomir Mech. “Recovering Detail in 3D Shapes Using Disparity Maps”. In: *ECCV Workshop, Learning to Generate 3D Shapes and Scenes*. 2022.

- [4] RM Dyke et al. "SHREC'19: Shape Correspondence with Isometric and Non-Isometric Deformations". In: *Proceedings of Eurographics Workshop on 3D Object Retrieval (3DOR)*. 2019.
- [5] Tomas Hodan et al. "A Summary of the 4th International Workshop on~ Recovering 6D Object Pose". In: *Proceedings of the European Conference on Computer Vision (ECCV)*. 2018.

Talks

- [1] "TextDeformer". In: *SIGGRAPH 2023*. Los Angeles, USA, 15/08/2023.
- [2] "Learning 3D Generation". In: *Société Informatique de France*. Grenoble, France, 14/06/2022.
- [3] "Learning 3D Generation and Matching". In: *Morpheo, INRIA Grenoble Rhône-Alpes*. Grenoble, France, 12/02/2021.
- [4] "Representating 3D Surfaces by deformations". In: *ECCV workshop, Learning 3D Representations for Shape and Appearance*. Paris, France, 28/08/2020.
- [5] "Learning 3D Generation and Matching". In: *Huawei London research*. Paris, France, 5/2020.
- [6] "Learning 3D Generation and Matching". In: *Naver Labs Europe*. Paris, France, 4/2020.
- [7] "Deep 3D Generation by Deformations". In: *Workshop Willow/Bair/Imagine*. Paris, France, 26/11/2019.
- [8] "Unsupervised cycle-consistent deformation for shape matching". In: *Symposium on Geometry Processing (SGP)*. Milan, Italy, 9/07/2019.
- [9] "Deep 3D deformations". In: *Berkeley Artificial Intelligence Research Lab (BAIR)*. Berkeley, US, 12/06/2019.
- [10] "Deep Learning for 3D surface reconstruction". In: *Laboratoire de Recherche en Informatique (LRI)*. Paris, France, 7/05/2019.
- [11] "General intro to Reinforcement Learning". In: *Ecole Nationale des Ponts et Chaussées (ENPC), team IMAGINE and CERMICS*. Paris, France, 27/02/2019.
- [12] "Deep Learning for 3D surface reconstruction". In: *Onera, Paris, France*. Paris, France, 29/01/2019.
- [13] "Deep Learning for 3D surface reconstruction". In: *Institut de Geographie Nationale (IGN), team MATIS*. Paris, France, 25/01/2019.
- [14] "Applications of optimal transport in machine learning". In: *Ecole Nationale des Ponts et Chaussées (ENPC), team IMAGINE*. Paris, France, 7/01/2019.
- [15] "Deep Learning for 3D surface reconstruction". In: *Telecom ParisTech*. Paris, France, 18/12/2018.
- [16] "Parametric estimation of 3D surfaces and correspondences". In: *Laboratoire d'Informatique de Paris 6 (LIP6), team MLIA*. Paris, France, 10/12/2018.
- [17] "3D-CODED : 3D Correspondences by Deep Deformation". In: *4th International Workshop on Recovering 6D Object Pose (ECCV)*. Munich, Germany, 9/09/2018.
- [18] "AtlasNet: A Papier-Mâché Approach to Learning 3D Surface Generation". In: *Proceedings IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*. Salt Lake City, US, 19/06/2018.