



Education

Ph.D. in Computer Science

University of Bordeaux, France.

2012/09

– Ph.D. Thesis: “Analysis of 3D objects at multiple scales: application to shape matching”

2009/10

Committee: P. Alliez, N. Mitra, A. Sharf, C. Schlick, P. Reuter, P. Guitton.

Qualification: N° 13227235300 (validity: 12/02/2013-31/12/2017)

2009 Master’s Degree in Computer Science, with honors

– *University of Bordeaux, France.*

2007

Master Thesis: “Semi-automatic reassembly of cultural heritage artefacts”

Career

Researcher

Since CNRS, IRIT, Université de Toulouse, INPT, UPS, UT1C, UT2J, France.

2016-10 *STORM research team.*

Main research topics: 3D Shape analysis, 3D point-clouds registration, Geometry Processing, Computer Graphics

2016-07 **Research associate**

– *University Paul Sabatier, IRIT, team VORTEX, Toulouse, France – ANR project MapStyle.*

2014/11

Main research topics: Abstraction and interpolation of rendering styles for map stylization, Structural Color Processing

2014/09 **Research associate**

– *University College London, Smart Geometry Group (geometry.cs.ucl.ac.uk/)*

2013/10

Main research topics: 3D point cloud processing and understanding

Post-doctoral fellow

2013/10

Collaboration between Inria Bordeaux (team manao) and Archeovision, France.

– Transfer of methods developed at Inria, conception and development of an open-source library Patate (patate.gforge.inria.fr)

2012/10

Development of geometry processing and visualization for 3D models on Archeogrid (archeogrid.in2p3.fr/). Study and deployment of metadata for Cultural Heritage databases (OAI-PMH, RDFa).

Honors and Awards

2020: Young Researcher Fellow Eurographics France (EGFR) (<https://projet.liris.cnrs.fr/egfr/yrf/>)

2017: SGP Software award (<http://geometry.cs.ucl.ac.uk/SGP2017/?p=awards>)

2014: Best paper award, Eurographics Symposium on Geometry Processing (<https://www.cs.cf.ac.uk/sgp2014/awards.html>)

2014: Notable article, 19 th Annual Best Computing, ACM-Thinkloud (computingreviews.com/recommend/bestof/notableitems.cfm?bestYear=2014)

Publications

Author ordering: principal investigator (first author), collaborator (by implication order), supervisor (last author, when first authored by a student).

International peer-reviewed journals (Statistics reported at the publication date from <http://www.scimagojr.com>)

2022

P. Mézières, N. Mellado, L. Barthe, M. Paulin. **Recursive analytic spherical harmonics gradient for spherical lights**. *Computer Graphics Forum, proc. of Eurographics*. [[code](#)]

CE. Himeur, T. Lejembre, T. Pellegrini, M. Paulin, L. Barthe, N. Mellado. **PCEDNet: a Lightweight Neural Network for Fast and Interactive Edge detection in 3d Point Clouds**. *ACM Transactions on Graphics (h-index: 218), Vol. 41, Issue 1 Feb 2022*. [[demo](#)]

2021

O. Hachette, F. Canezin, R. Vaillant, N. Mellado and L. Barthe. **Automatic shape adjustment at joints for the Implicit Skinning**, *Computer & Graphics. Computer Graphics Forum, proc. of SMI*.

T. Lejembre, D. Coeurjolly, L. Barthe, N. Mellado. **Stable And Efficient Differential Estimators on Oriented Point Clouds**. *Computer Graphics Forum (h-index: 120)*. [[code](#)]

J. Shao, W. Zhang, A. Shen, [N. Mellado](#), S. Cai, L. Luo, N. Wang, G. Yan, G. Zhou. **Seed Point Set-Based Building Roof Extraction From Airborne Lidar Point Clouds Using A Top-Down Strategy**. *Elsevier Automation in Construction*, 126 (h-index: 121)

N. Bonneel, D. Coeurjolly, J. Digne, [N. Mellado](#). **Code Replicability in Computer Graphics**. *ACM Transactions on Graphics (h-index: 195)*. *Replicability Stamp*. [[code](#)]

J. Shao, W. Zhang, [N. Mellado](#), S. Jin, S. Cai, L. Luo, L. Yang, G. Yan, G. Zhou. **Single Scanner BLS System for Forest Plot Mapping**. *IEEE Transactions on Geoscience and Remote Sensing (h-index: 236)*

J. Shao, W. Zhang, [N. Mellado](#), N. Wang, S. Jin, S. Cai, L. Luo, T. Lejemble. **SLAM-aided forest plots mapping combining terrestrial and mobile laser scanning**. *ISPRS Journal of Photogrammetry and Remote Sensing (h-index: 110)*

2020 T. Lejemble, C. Mura, L. Barthe, [N. Mellado](#). **Persistence Analysis of Multi-scale Planar Structure Graph in Point Clouds**. *Computer Graphics Forum 39 (h-index: 99)*. *Replicability Stamp*. [[code](#)]

A. Ghazanfarpour, [N. Mellado](#), C.E. Himeur, L. Barthe, J.P. Jessel. **Proximity-Aware Multiple Meshes Decimation using Quadric Error Metric**. *Elsevier Graphical Models (h-index: 52)*

J. Tachella, Y. Altmann, [N. Mellado](#), A. McCarthy, R. Tobin, G. S. Buller, J.y.Y. Tourneret, S. McLaughlin. **Real-Time 3D reconstruction from single-photon lidar data using plug-and-play point cloud denoisers**. *Nature Communications (h-index: 248)*, 10, 4984. *Nature Replicability Check*. [[code](#)]

2019 S. Casti, M. Livesu, [N. Mellado](#), N. Abu Rumman, R. Scateni, L. Barthe, E. Puppo. **Skeleton Based Cage Generation Guided by Harmonic Fields**. *Elsevier Computer & Graphics (h-index: 58)*, 81:140-151

V. Roussellet, N. Abu Rumman, F. Canezin, [N. Mellado](#), L. Kavan, L. Barthe. **Dynamic implicit muscles for character skinning**. *Elsevier Computers & Graphics (h-index: 58)*

2018 J. Shao, W. Zhang, [N. Mellado](#), P. Grussenmeyer, R. Li, Y. Chen, P. Wan, X. Zhang, S. Cai. **Automated Markerless Registration of Point Clouds from TLS and Structured Light Scanner for Heritage Documentation**. *Elsevier Journal of Cultural Heritage (h-index: 48)*

[N. Mellado](#), D. Vanderhaeghe, C. Hoarau, S. Christophe, M. Bredif, L. Barthe. **Constrained Palette-Space Exploration**. *ACM Transaction on Graphics (TOG – h-index: 127)*

2017 [N. Mellado](#), M. Dellepiane, R. Scopigno. **Relative scale estimation and 3D registration of multi-modal geometry using Growing Least Squares**. *Transactions on Visualization and Computer Graphics (TVCG – h-index: 86)*. *Selected to be presented at the Eurographics Symposium on Geometry (SGP) 2016*

2016 T. Subileau, [N. Mellado](#), D. Vanderhaeghe, M. Paulin. **RayPortals: A Light Transport Editing Framework**. *The Visual Computer (h-index: 45)*

A. Monszpart, [N. Mellado](#), G. J. Brostow, N. J. Mitra. **RAPTER: Rebuilding Man-made Scenes with Regular Arrangements of Planes**. *ACM Transaction on Graphics (TOG – h-index: 127)* [[code](#)]

2015 [N. Mellado](#), D. Aiger, N. Mitra. **Super 4PCS: Fast Global Pointcloud Registration via Smart Indexing**. *Computer Graphics Forum (CGF – h-index: 73)*. *Best Paper Award*. *SGP Software award* [[code](#)]

G. Nader, G. Guennebaud, [N. Mellado](#). **Adaptive multi-scale analysis for point-based surface editing**. *Computer Graphics Forum (CGF – h-index: 73)*, *Proc. of Pacific Graphics*.

2014 B. Ridel, P. Reuter, J. Laviolle, [N. Mellado](#), X. Granier, N. Couture. **The Revealing Flashlight: Interactive spatial augmented reality for detail exploration of cultural heritage artifacts**. *ACM Journal on Computing and Cultural Heritage (JOCCH – h-index: 10)*. *Notable article, 19th Annual Best Computing, Computing Reviews, ACM-Thinkloud (link)*

2012 [N. Mellado](#), G. Guennebaud, P. Barla, P. Reuter, C. Schlick. **Growing Least Squares for the Analysis of Manifolds in Scale-Space**. *Computer Graphics Forum (CGF – h-index: 73)*, *Proc. of Symposium on Geometry Processing* [[code](#)]

International conferences with peer-reviewing process

2021 A. Niyazov, N. Mellado, L. Barthe and M. Serrano. **Dynamic Decals: Pervasive Freeform Interfaces Using Constrained Deformable Graphical Elements**. *ACM Interactive Surfaces and Spaces Conference (ISS)*, 2021.

2019 E. Moscoso Thompson, G. Arvanitis, K. Moustakas, N. Hoang-Xuan, E.R. Nguyen, M. Tran, T. Lejemble, L. Barthe, [N. Mellado](#), C. Romanengo, S. Biasotti, B. Falcidieno. **SHREC'19 track: Feature Curve Extraction on Triangle Meshes**. *Eurographics Workshop on 3D Object Retrieval (2019)*.

2018 S. Biasotti 1, E. Moscoso Thompson, L. Barthe, S. Berretti, A. Giachetti, T. Lejemble, [N. Mellado](#), K. Moustakas, I. Manolas, D. Dimou, C. Tortorici, S. Velasco-Forero, N. Werghe, M. Polig, G. Sorrentino, S. Hermon. **SHREC'18 track: Recognition of geometric patterns over 3D models**. *Eurographics Workshop on 3D Object Retrieval (2018)*.

2016 S. Christophe; B. Dumenieu; J. Turbet; C. Hoarau; [N. Mellado](#); J. Ory; H. Loi; A. Masse; B. Arbelot; R. Vergne; M. Brédif; T. Hurtut; J. Thollot; D. Vanderhaeghe. **Map Style Formalization: Rendering Techniques Extension for Cartography**. *Non-Photorealistic Animation and Rendering (NPAR, production paper) (2016)*.

2015	T. Subileau, <u>N. Mellado</u> , D. Vanderhaeghe, M. Paulin. Light Transport Editing with Ray Portals . <i>Computer Graphics International (CGI) 2015</i> .
2014	M. Hueting, A. Monszpart, <u>N. Mellado</u> . MCGRAPH: Multi-Criterion Representation for Scene Understanding . <i>Siggraph Asia 2014 Workshop on Indoor Scene Understanding: Where Graphics meets Vision</i> .
2013	<u>N. Mellado</u> , P. Song, X. Yan, C. Fu, N. Mitra. Computational Design and Construction of Notch-free Reciprocal Frame Structures . <i>Proc. of Advances in Architectural Geometry, 2014</i> .
2013	<u>N. Mellado</u> , P. Barla, G. Guennebaud, P. Reuter, G. Duquesne. Screen-Space Curvature for Production-Quality Rendering and Compositing . <i>ACM Siggraph 2013 Talks, 2013</i> .
2010	<u>N. Mellado</u> , P. Reuter, C. Schlick. Semi-automatic geometry-driven reassembly of fractured archeological objects . <i>Proc. of the 11th International Symposium on Virtual Reality, Archaeology and Cultural Heritage (VAST), 2010</i> .

International communications with peer-reviewing process (posters)

2022	Y. Nyffenegger-Pere, S. Blanco, J.L. Dufresne, M. El Hafi, V. Eymet, V. Forest, R. Fournier, <u>N. Mellado</u> , N.C. Mourta day, M. Paulin. Sampling molecular state transitions in a line-by-line Monte Carlo approach to estimate radiative forcing for climate change studies . <i>International Radiation Symposium</i> , Jul 2022, Thessaloniki, Greece.
2019	T. Lejemble, C. Mura, L. Barthe, <u>N. Mellado</u> . Multi-Scale Point Cloud Analysis . <i>Eurographics Poster (2019)</i> .
2017	C. Michaud, <u>N. Mellado</u> , M. Paulin. Mesh Simplification With Curvature Error Metric . <i>Eurographics Poster (2017)</i> .

Responsibilities

National	Expert for the ANR (Agence Nationale de la Recherche) – CE38 2022 Eurographics French Chapter: Committee member (https://projet.liris.cnrs.fr/egfr/camembers/) (since 2018)
Local	Scientific expert for the Doctoral School EDMITT (since 2021) IRIT Working group: research outcomes management (since 2022) IRIT Working group: reworking the IRIT intranet (2020-2022)

Evaluation activities

PhD Committees

2021	2021/10/08: <i>Muxingzi Li</i> : Geometric approximation of structured scenes from images Committee: Hui Huang (reviewer), Bruno Vallet (reviewer), Renault Marlet (president), <u>Nicolas Mellado</u> , Florent Lafarge (advisor)
2021	2021/05/27: <i>Ific Goudé</i> : Rendering of High Dynamic Range 3D point clouds Committee: Raphaëlle Chaine (reviewer), Daniel Meneveaux (reviewer), Éric Marchand (president), Céline Loscos, Olivier Le Meur, <u>Nicolas Mellado</u> , Rémi Cozot (advisor), Kadi Bouatouch (advisor)
2020	2020/12/09: <i>Thibault Lejemble</i> : Multi-Scale Point Cloud Analysis Committee: Marc Alexa (reviewer), Julie Digne (reviewer), Mathias Paulin (president), Mathieu Desbrun, <u>Nicolas Mellado</u> (advisor), Loic Barthe (advisor)
2020	2020/12/17: <i>Corentin Mercier</i> : Modélisation géométrique, simplification et visualisation des fibres de la matière blanche du cerveau Committee: Raphaëlle Chaine (reviewer), Georges-Pierre Bonneau (reviewer), Olivier Colliot (president), <u>Nicolas Mellado</u> , Isabelle Bloch (advisor), Pietro Gori (advisor)

PhD Thesis Monitoring Committees

2022	2022/06/20: <i>Olivier Pradelle</i> : Analyse et Enrichissement des Scènes 3D Numérisées (CIFRE) Supervisors: Raphaëlle Chaine, Julie Digne, David Wendland. Committee: Nathalie Guin, <u>Nicolas Mellado</u>
2022	2022/03/18: <i>Thibault Payet</i> : Extraction sémantique d'objets dans des nuages de points en milieu industriel Supervisors: Jean-Luc Mari, Ricardo Uribe Lobello, Romain Raffin. Committee: Éric Remy, <u>Nicolas Mellado</u>
2021	2021/05/25: <i>Flora Quilichini</i> : Chirurgie en réalité augmentée Supervisors: Marc Antonini, Frédéric Payan. Committee: Grégoire Malandain, <u>Nicolas Mellado</u>

2021/04/16: *Olivier Pradelle*: Analyse et Enrichissement des Scènes 3D Numérisées (CIFRE)
Supervisors: Raphaëlle Chaine, Julie Digne, David Wendland. Committee: Nathalie Guin, [Nicolas Mellado](#)

2021/11/15: *Thibault Payet*: Extraction sémantique d'objets dans des nuages de points en milieu industriel
Supervisors: Jean-Luc Mari, Ricardo Uribe Lobello, Romain Raffin. Committee: Éric Remy, [Nicolas Mellado](#)

2020

2020/06/12: *Flora Quilichini*: Chirurgie en réalité augmentée
Supervisors: Marc Antonini, Frédéric Payan. Committee: Grégoire Malandain, [Nicolas Mellado](#)

2020/11/02: *Thibault Payet*: Extraction sémantique d'objets dans des nuages de points en milieu industriel
Supervisors: Jean-Luc Mari, Ricardo Uribe Lobello, Romain Raffin. Committee: Éric Remy, [Nicolas Mellado](#)

Science Replicability

2020 Co-founder of the Replicability.Graphics Initiative (<http://replicability.graphics/>).
International Evaluation Committee for the Graphics Replicability Stamp Initiative (GRSI, www.replicabilitystamp.org/).

Program Committees

2022 International Program Committee member Eurographics 2022 (EG2022)
International Program Committee member Eurographics Symposium on Geometry Processing (SGP)
International Program Committee member Eurographics Shape Modeling International (SMI)
Chair of the Special Track on Geometry and Deep Learning RRPR (rrpr2022.sciencesconf.org/resource/page/id/3)
Chair of the Best paper committee j•FIG (projet.liris.cnrs.fr/egfr/bestpapers/)

2021 International Program Committee member Eurographics 2021 (EG2021)
International Program Committee member Eurographics Symposium on Geometry Processing (SGP)
International Program Committee member EurasiaGraphics 2021
Chair of the Graduate School of the Eurographics Symposium on Geometry Processing 2021 (SGP2021)
Chair of the Best paper committee j•FIG (projet.liris.cnrs.fr/egfr/bestpapers/)

2020 International Program Committee member Shape Modeling international (smi2020.sciencesconf.org/resource/page/id/1)
International Program Committee member Eurasia Graphics (eurasiagraphics.org/)
Chair of the Special Track on Geometry and Deep Learning RRPR (rrpr2020.sciencesconf.org/resource/page/id/2)
Chair of the Best paper committee j•FIG (projet.liris.cnrs.fr/egfr/bestpapers/)

2019 Board of reviewer WSCG 2019
Best paper committee j•FIG 2019 (projet.liris.cnrs.fr/egfr/bestpapers/)

2018 Eurographics French Chapter Committee member (liris.cnrs.fr/~egfr/ca-members.html)
Program Committee member RRPR2018 (rrpr2018.sciencesconf.org/resource/page/id/1).
Program Committee member CASA 2018 (casa2018.ios.ac.cn/committee/)
Best paper committee j•FIG 2018 (projet.liris.cnrs.fr/egfr/bestpapers/)

2017 Best paper committee j•FIG 2017 (projet.liris.cnrs.fr/egfr/bestpapers/)

2016 Program Committee member RRPR2016 (wrrpr2016.sciencesconf.org/page/committee).
Best paper committee j•FIG 2016 (projet.liris.cnrs.fr/egfr/bestpapers/)

2015 Best paper committee AFIG/EGFR 2015 (projet.liris.cnrs.fr/egfr/bestpapers/)

Scientific Expertise and Industrial Collaborations

2021 Consulting: State of the art for point cloud analysis (Alpha Wind)

2020 Consulting: Geometry processing for Augmented Reality applications (Innersense) – 6 months
Scientific expert for the Délégation Régionale à la Recherche et à la Technologie Occitanie – Crédit Impot Recherche

2019 Consulting: Geometrical Deep Learning (ZEG.ai, London) – 3 months
Scientific expert for the Région Nouvelle Aquitaine (AAP ESR 2019, volet "Recherche")
Scientific expert for the Délégation Régionale à la Recherche et à la Technologie Occitanie – Crédit Impot Recherche

2018 Scientific expert for Région Nouvelle Aquitaine (AAP Recherche - Enseignement Supérieur - Plateformes Mutualisées et ouvertes)

2016 State-of-the-Art: Acquired 3D data analysis and processing (Airbus ID-Lab).

2010 Scientific expert: Advising and monitoring of a provider's solution (Vectuel) for the digital modeling of the campus of Bordeaux.

Invited talks

2022	2022/07/02: Introduction to Scale-Space Analysis for 3d Point Clouds. Masterclass master 3DIA (IUT Puy-en-Velay) – Visio
	2022/04/04 : Analyse de données non structurées avec des réseaux à impulsion binaires. Journée Scientifique Toulouse Mind and Brain Institute. (https://tmbi-6avril22.sciencesconf.org)
	2022/06/02: Réseaux de Neurones pour le Traitement de Nuages de Points 3D acquis : Approches rapides, robustes, et à faible impact énergétique. Webinar Autour de la 3D, GDR Magis (github.com/VCityTeam/MAGIS-AP3D/blob/master/Media/README.md)
2022/07/03: Replicability in Computer Graphics. Graduate School SGP (school.geometryprocessing.org/summerschool-2022/index.html#course7) – Visio	
2021	Dagstuhl seminar 21471: Scale-Space for Machine Learning on 3d point clouds
	2021/10/19: Masterclass Master Imagine (Univ. Montpellier): Introduction du Scale-Space Analysis for 3d point clouds
	2021/03/29: Conference on Digital Geometry and Discrete Variational Calculus: Differential Analysis of Point Set Surfaces at Multiple Scales (https://dgdvc.sciencesconf.org)
	2021/03: Présentation donnée en Lycée Général : Une introduction à la recherche en Informatique Graphique.
2020	Introduction to Scale-Space analysis for 3d acquired point clouds. Keynote Journée Francaises d’Informatique Graphique (link)
	3dARD: 3d-Acquired Research Dataset. Journée du Groupe de Travail en Modélisation Géométrique. (link)
2019	2019/12/03: Table Ronde De l’objet d’étude au modèle 3D: challenges pour la numérisation et l’interaction. Rencontres du Consortium 3D-SHS.
	2019/12/12: Implicit Scale Space. Journées ANR CoMeDiC (link).
2017	Dagstuhl seminar 17221: Multi-scale differential analysis of point-clouds
	Airbus IDLab: Acquired 3D data analysis and processing
2015	Journées de Géométrie Algorithmique (JGA): Fast Global Pointcloud Registration (link)
	Journées de l’Association d’Informatique Graphique: RAPTER: Rebuilding Man-made Scenes with Regular Arrangements of Planes
	Visiting Inria Sophia Antipolis (Team TITANE): Analysis of Point Clouds at Multiple Scales
2013	Visiting Smart Geometry Processing Group, UCL: Growing Least Squares for Surface Analysis and Editing
2011	Semi-Automatic Reassembly for Cultural Heritage Course (4 hours)
	<i>Lecture cycle European methodological studies for archaeologists (European Grant project), Masaryk University, Czech Republic, October 2011.</i>

Peer-Reviewing

I regularly serve as a reviewer for the major journals (ACM Transactions on Graphics, IEEE Transactions on Visualization and Computer Graphics, Wiley Computer Graphics Forum, Computer Aided Design, Computer Graphics International, The Visual Computer, Pattern Recognition, ...) and conferences (ACM Siggraph, ACM Siggraph Asia, Eurographics, Shape Modeling international, Eurographics Symposium on Geometry Processing) related to Computer Graphics.

As some of my work have applications in other fields, I sometime reviews papers in journals such as: Journal on Computing and Cultural Heritage, International Journal of Computer Assisted Radiology and Surgery, Springer Autonomous Robot, Springer Multimedia Systems, Numerical Algorithms, Journal of Morphology.

Other activities

Software

Active projects	Replicability.graphics (github.com/GraphicsReplicability/replicability.graphics)
	Ponca: a Point-Cloud Analysis library (github.com/poncateam/ponca)
	OpenGR: Open Global Registration (github.com/STORM-IRIT/OpenGR).
	- CGAL Integration (cgal.org/2020/03/23/Registration)
	Radium Engine (github.com/STORM-IRIT/Radium-Engine)
Past projects	A. Monzpart, N. Mellado (11%), RAPTER Library (github.com/amonzpart/globOpt/)
	N. Mellado , Super4PCS Library (github.com/nmellado/Super4PCS)
	N. Mellado , G. Ciaudo, G. Guennebaud, P. Barla. Patate Library (patate.gforge.inria.fr)

Scientific Communications

Since 2020	Member of the Scientific Committee of the association Les Maths en Scene (lesmathsenscene.fr/)
	• Member of the committee of the Éloquensciences competition (lesmathsenscene.fr/concours/eloquensciences/)
	• Scientific Referent for the project Regard de Géomètre (lesmathsenscene.fr/regards-de-geometre/)

	Several talks in classes per year (from Elementary to High School)
2019	L'imagerie lidar simple photon passe en temps réel (ins2i.cnrs.fr/fr/cnrsinfo/limagerie-lidar-simple-photon-passe-en-temps-reel)
2018	Une méthode de simplification des modèles 3D (cnrs.fr/cnrsinnovation-lalettre/actus.php?numero=554)
2017	Interview 3DVF: retour sur la publication Constrained Palette-Space Exploration (3dvf.com/redaction/dossier-1372-siggraph-2017-retour-sur-la-publication-constrained-palette-space-exploration-html/) Mission Siggraph GDR-IGRV-AFIG (irit.fr/recherches/STORM/MelladoNicolas/category/mission-siggraph-2017/)
2012	P. Reuter, N. Mellado , I. Hairy. Exhibition of fabricated copies of the Colossal statues of the Alexandria Pharos (Virtually reassembled). <i>National Maritime Museum, Paris 2012</i> .
2011	P. Reuter, N. Mellado , X. Granier, I. Hairy, R. Vergnieux, N. Couture. Semi-automatic 3D Acquisition and Reassembly of Cultural Heritage: The SeARCH Project. <i>ERCIM News 86, July 2011</i> .

Funded Projects

Project Leader	SSLAM: Scale-Space for Machine Learning on 3d Point Clouds – JCJC ANR-22-CE23-XXXX (2023-2027) 3D-Acquired Research Dataset (3dard.cnrs.fr/) – Appel à Actions Consortium 3D SHS (2019-2020) Analysis and Structuring of images color point-clouds geometry – LabEx CIMI (2017)
Leading Member	Augmented reality process for per operative localization of breast cancer – Toulouse Tech Transfer (2019-2020) McGrad: Monte-Carlo Global Radiative Forcings Computation (mcg-rad.ipsl.fr/) – ANR-18-CE46-0012 (2018-2022) Si3DCO: Appearance-Preserving Mesh Simplification – Projet FEDER/Région Occitanie Readynov (2018-2021) Palex: Constrained Palette-Space Exploration – Projet pré-maturation Région Safir 6889 (2018) Perceptual analysis of Constrained Palette-Space Exploration – Bourses mobilité GdR IG-RV (2017) 3DSi: vos objets 3D industriels prêts pour le web mobile – Toulouse Tech Transfer (2017) – program description (fr)
Collaborator	Structures – JCJC ANR-19-CE38-0009-01 (2019-2023) CALITROP – ANR-16-CE33-0026 (2017-2021) Ray portals – Toulouse Tech Transfer (2016) – program description (fr) MapStyle : <i>Stylized rendering in cartography</i> – ANR-12-CORD-0025 (2014-2016) SmartGeometry – ERC CORDIS 335373 SeARCH : Semi-Automatic 3D Acquisition and Reassembly of Cultural Heritage – ANR-09-CORD-0019 (2009-2012)

Supervision

PhD Students	Current: Since 2021/10: <i>François Gaits</i> : Non-invasive procedure for per operative localization of nonpalpable breast cancer. Co-supervisors: Adrian Basarab (Univ. de Lyon) Since 2021/10: <i>Chems-Eddine Himeur</i> : Inspection d'éoliennes. Co-supervisors : Loic Barthe (Univ. Toulouse), Laurent Jobart (AlphaWind). CIFRE. Since 2019/10: <i>Aziz Niyazov</i> : Pervasive Freeform User Interfaces. Co-supervisor: Marcos Serrano (Univ. Toulouse), Loic Barthe (Univ. Toulouse)
Research Engineers	Past: 2017/10-2021: <i>Jie Shao</i> : Point-cloud registration and processing. Co-supervisor: Wuming Zhang (Beijing Normal University). Not defended in France due to COVID. 2017/10-2020/12: <i>Thibault Lejembre</i> : Point-based shape analysis. Co-supervisor: Loic Barthe (Université de Toulouse) 2016/09-2019/11/22: <i>Anahid Ghazanfarpour</i> : Décimation de maillages multiples sensible aux proximités et utilisant une métrique d'erreur quadrique. Co-supervisor: Jean-Pierre Jessel (Université de Toulouse) 2022/02-now : Gauthier Bouyjou : Program PAUSE. Co-supervisor: Adrian Basarab (Univ. Lyon) 2019/06-2020/05: <i>Clément Rodrigues-Viguié</i> (Mésio-Star): Program PalEx. Co-supervisor: David Vanderhaeghe (Univ. Toulouse)
Software Engineers	2019/10-2021/09: <i>Chems-Eddine Himeur</i> : Simplification d'objets 3D sous contraintes (Readynov Si3DCO). Co-supervisor: Mathias Paulin (Univ. Toulouse) 2017: <i>Davut IA, Nicolas Kaminski</i> : 3DSi : vos objets 3D industriels prêts pour le web mobile. Co-supervisors: Mathias Paulin (Univ. Toulouse), David Vanderhaeghe (Univ. Toulouse), Loic Barthe (Univ. Toulouse) 2016: <i>Laurent Boiron</i> : Ray Portals. Co-supervisors: Mathias Paulin (Univ. Toulouse), David Vanderhaeghe (Univ. Toulouse), Thomas Subileau (IRIT)

Summer 2022

- *Matthieu Gomiero*: Restructuration, Optimisation et Évaluation énergétique d'outils d'analyse de nuage de point. Co-supervisor: Loic Barthe

Summer 2021

- *Sébastien Egner*: Edge reconstruction from annotated point clouds. Co-supervisor: Loic Barthe.
- *Pierre Cuquel* : Apprentissage par Spiking Neural Network. Co-supervisors : Loic Barthe, Dominique Longin, Simon Thorpes
- *Francois Gaits* : Prototype de réalité augmentée pour la chirurgie du cancer du sein. Co-supervisor : Adrian Basarab (Univ. Toulouse)
- *Nguyen An Thuyen Duong*: Un logiciel d'exécution et d'édition de segment d'image 2D. Co-supervisor : Adrian Basarab (Univ. Toulouse)
- Google Summer of Code: *Aniket Agarwalla*: Moving Least Squares for point set smoothing and differential properties estimation: project description

Summer 2020

- *Yann-Situ Gazull*: Extraction Automatique de Contraintes pour l'Instanciation de Palettes de Couleur. Co-supervisor: David Vanderhaeghe (Univ. Toulouse)
- *Quentin Marcadet*: 3D acquisition and processing for the 3D-Acquired Research Dataset. Co-supervisor: Loic Espinasse (Archeovision Production)
- Google Summer of Code: *Felix Herrmann*: Extend CGAL Point Cloud Registration to Multiple Objects. Co-supervisor: Simon Giraudot (Geometry Factory) – project description

Master Students

Summer 2019

- *Filippo Andrea Fanni*: Structural Color Processing. Co-supervisor: David Vanderhaeghe (Univ. Toulouse)
- *Chems-Eddine Himeur*: 3D Point-Cloud Structuring by Learning
- Google Summer of Code: *Necip Fazil Yildiran*: Make OpenGR be able to work directly with CGAL point clouds. Co-supervisor: Simon Giraudot (Geometry Factory) – project description

Summer 2018

- *Baptiste Delos*: Structural Color Processing. Co-supervisor: David Vanderhaeghe (Univ. Toulouse)
- *Paul Bernardi*: Structural Color Processing. Co-supervisor: David Vanderhaeghe (Univ. Toulouse)

Summer 2017

- *Thibault Lejembre*: Point-Cloud analysis
- *Xavier Chalut*: Mesh Simplification. Co-supervisor: Jean-Pierre Jessel (Univ. Toulouse)

Summer 2013:

- *Georges Nader*: Adaptive multi-scale analysis for point-based surface editing [NGM14].
- *Bastien Perpère*: Implementation of the method *ray-traced curvature* in Modo. Co-supervisors: Pascal Barla (Inria), Gael Guennebaud (Inria), Gregory Duquesne (Luxology).

Summer 2022

- *Léo Arnal*: reconstruction d'arêtes dans des nuages de points 3d
- *Antoine Lafon*: calcul temps réel d'estimateurs différentiels dans des nuages de points 3d
- *Linda Ablaoui*: reconstruction de lignes et de courbes dans des nuages de points 3d
- *Léo Balbarie*: implémentation d'un wrapper python PyPonca pour la bibliothèque Ponca

Undergrad Students

Summer 2020

- *Wilhem Barbier*: échantillonnage de transitions pour le calcul d'absorption par intégration de Monte Carlo. Co-supervisor: Mathias Paulin
- *Loic Robert*: implémentation d'algorithmes de rétro-déformation de cranes. Co-supervisor: Loic Barthe

Summer 2028

- *Sandra Alfaro Romero*: Refactoring of the OpenGR Library

Teaching

2021'22

Point-based Geometry Processing. Lectures (6h), Master 2, Université Paul Sabatier Toulouse, France.
Data Structures. Lectures and Lab (30h), Licence 2, Université Paul Sabatier Toulouse, France.
Computer Science, tutorials (14h), Licence 1, Université Paul Sabatier Toulouse, France.
Parallel programming (8h), Master 1, Université Paul Sabatier Toulouse, France.
Programming project, supervision (2 groups). Master 1, Université Paul Sabatier Toulouse, France.
Internship tutor (2 students). Master 1, Université Paul Sabatier Toulouse, France.

2020'21

Point-based Geometry Processing. Lectures (6h), Master 2, Université Paul Sabatier Toulouse, France.
Data Structures. Lectures and Lab (30h), Licence 2, Université Paul Sabatier Toulouse, France.
Computer Science, tutorials (14h), Licence 1, Université Paul Sabatier Toulouse, France.
Programming project, supervision (3 groups). Master 2, Université Paul Sabatier Toulouse, France.
Programming project, supervision (5 groups). Master 1, Université Paul Sabatier Toulouse, France.
Internship tutor. Master 2, Université Paul Sabatier Toulouse, France.

2019'20

Point-based Geometry Processing. Lectures (4h), Master 2, Université Paul Sabatier Toulouse, France.

2018'19 Programming project, supervision (6h). Master 2, Université Paul Sabatier Toulouse, France.

2017'18 Programming project, supervision (6h). Master 1, Université Paul Sabatier Toulouse, France.

2016'17 Programming project, supervision (6h). Master 2, Université Paul Sabatier Toulouse, France.

2015'16 Physically-based rendering, lectures (8h), tutorials (12h). Last-year engineering-school, Upssitech, France.
Computer Tools for Multimedia Applications, tutorials (12h). Master 1, Université Paul Sabatier Toulouse, France.

2014'15 3D rendering, tutorials (20h). Licence 2, Université Paul Sabatier Toulouse, France.
Programming project, supervision (2x3h). Licence 3, Université Paul Sabatier Toulouse, France.

2013'14 Geometry Processing, tutorials and labs (20h). Master 1, UCL, United Kingdom.

2012'13 2D and 3D rendering, tutorials and labs (14h). Last-year engineering-school, Enseirb, France.
C/C++, lectures and tutorials (12h). Last-year engineering-school, Enseirb, France.

2011'12 2D and 3D rendering, tutorials (14h). Last-year engineering-school, Enseirb, France.
2D and 3D rendering, tutorials (18h). Master 2 (Computer&Graphics), Bordeaux University, France.
C/C++, lectures and tutorials (12h30). Last-year engineering-school, Enseirb, France.
Programming project, supervision (20h). Last-year engineering-school, Enseirb, France.

2010'11 2D and 3D rendering, lectures (16h). Last-year engineering-school, Enseirb, France.
2D and 3D rendering, tutorials (16h). Last-year engineering-school, Enseirb, France.
