

Julien Tierny

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75005 Paris, France.

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Research Scientist

PROFESSIONAL EXPERIENCE

- 2010-Present * *CNRS Permanent Researcher*, Topological Data Analysis and Visualization,
2014-Present: Sorbonne Université, LIP6, Paris, France.
2010-2014: Telecom ParisTech, LTCI, Paris, France.
- 2008 - 2010 * *Post-doctoral research associate* (computational topology for visualization and graphics),
Scientific Computing and Imaging Institute, University of Utah, USA;

EDUCATION

- 2016 * *Habilitation in Computer Science*, Sorbonne Universités UPMC, France;
Thesis title: "*Contributions to Topological Data Analysis for Scientific Visualization*";
Committee: I. Bloch, J.-D. Fekete, P. Frey, H. Hagen, C. Johnson, B. Lévy, P. Ricoux, W. Schroeder.
- 2005-2008 * *Ph.D. in Computer Science*, Lille University, France;
Thesis title: "*Reeb graph based 3D shape modeling and applications*";
Committee: A. Baskurt, B. Lévy, C. Labit, A. Srivastava, S. Tison.
Advisors: M. Daoudi and J.-P. Vandeboire.
Summa cum laude ("*Mention très honorable*").
- 2005 * *M. Sc. in Computer Science*, Lille University;
Summa cum laude ("*Mention très bien*"), valedictorian.
- * *Engineer degree at TELECOM Lille 1*;
(French "*Grande École*", Information Technology Institute, License and Master);
Specialization: Multimedia software engineering, valedictorian.
- 2000 * French scientific *Baccalauréat* ;
Summa cum laude ("*Mention très bien*").

AWARDS

- 2019 * **Best Paper Honorable Mention Award**, IEEE VIS 2019;
* **Best Paper Award**, IEEE Lдав 2019;
- 2018 * **Best Paper Honorable Mention Award**, IEEE Lдав 2018;
- 2017 * **Best Paper Honorable Mention Award**, IEEE VIS 2017;
* Selection of our open-source software platform **TTK** (Topology ToolKit) among O'Reilly's daily **Four short links**.
* Selection of my paper "Jacobi Fiber Surfaces for Bivariate Reeb Space Computation" as a notable article in computing in 2016 by the journal **ACM Computing Reviews**.
* Selection of my paper "Jacobi Fiber Surfaces for Bivariate Reeb Space Computation" as a notable highlight in visualization by the magazine **IEEE Computing Now** (February 2017 issue)
- 2016 * **Best Paper Award**, IEEE VIS 2016;
* **Honorable Mention Award**, IEEE Scientific Visualization Contest 2016;
- 2014 * **CNRS Award for Scientific Excellence**;
- 2013 * **Best Paper Award**, Eurographics Symposium on Parallel Graphics and Visualization 2013.
- 2008 * **Fulbright research fellowship** (US Department of State);
* Lavoisier research fellowship (French Ministry of Foreign and European Affairs);
- 2005 * French Research Ministry Ph.D. fellowship;
- * **IBM Top Student Recognition Event** (EMEA), Stuttgart, Germany. Final contest winner (in group).
- 2004 * French Research Ministry M.Sc. Excellence Fellowship.

RESEARCH

Research Interests

- Research fields
- ★ Topological Data Analysis, Visualization, Uncertainty; Computational Topology, Morse Theory;
- Fields of interest
- ★ Meshing, parameterization, Riemannian geometry, computational photography.

Funded Projects

- H2020-FET
- ★ “Vestec: Visual Exploration and Sampling ToolKit for Extreme Computing” Work package leader, March 2018 - March 2021.
- CIFRE - Total
- ★ “Topological Reduction for Very Large Data Analysis” Principal investigator, July 2016 - July 2019.
- CIFRE - Kitware
- ★ “In-situ Topo”: In-situ Topological Data Analysis. Principal investigator, February 2016 - February 2019.
- FSN
- ★ “AVIDO”: In-situ uncertain data analysis and visualization. Local investigator, October 2015 - October 2018.
- ANR-CONTINT
- ★ “CrABEx”: Example-based 3D modeling support. Local investigator, November 2013 - November 2017.
- RTRA-Digiteo
- ★ “Uncertain Topo-Vis”: Visualization of Uncertain Scalar Fields through Topology Analysis. Principal investigator, May 2013 - Octobre 2014.

Students

- Master Students
- ★ 2019: Yizhe Wang.
 - ★ 2018: Léa Sta, Joseph Budin.
 - ★ 2017: Léo Hauchecorne.
 - ★ 2016: Michael Michaux.
 - ★ 2015: Matthew Henry, Charles Gueunet, Guillaume Favelier.
 - ★ 2014: Chantal Ding, Kenny Peou.
- Ph.D. Students
- ★ Jules Vidal, September 2018 - September 2021.
 - ★ Maxime Soler, July 2016 - July 2019.
Co-advised with: Mélanie Plainchault and Bruno Conche.
 - ★ Charles Gueunet, February 2016 - February 2019.
Co-advised with: Pierre Forting and Julien Jomier.
 - ★ Ana-Maria Vintescu, May 2014 - May 2017.
Co-advised with: Florent Dupont, Guillaume Lavoué, Pooran Memari.
 - ★ Mariem Gargouri, November 2011 - June 2015.
Co-advised with: Elsa Angelini, Erwan Jolivet, Philippe Petit.
 - ★ Brian Summa, Doctoral Internship 2011, Ongoing collaborations.
- Post-doctoral researchers
- ★ Daisuke Sakurai (September 2016 - April 2017, now a post-doctoral researcher at the Zuse Institute, Berlin),
Co-advised with Julie Delon.
 - ★ David Guenther (May 2013 - October 2014, now a software engineer at Sirona Dentals Inc.).
- Engineers
- ★ Pierre Guillou (2019 - Present).
 - ★ Guillaume Favelier (2016 - 2019, now a research engineer at INRIA).

Collaborations

- International Collaborations
- ★ Tulane University, University of Arizona, University of Utah, Clemson University, University of Leeds, Universidade de Sao Paulo, New York University, Lawrence Livermore National Laboratory.
- National Collaborations
- ★ Institut du Calcul et de la Simulation (Multi-disciplinary Center at UPMC), Laboratoire de Chimie Théorique (UPMC), LIFL, LIRIS, 3DDUO, Renault.
- Visiting Professors
- ★ Joshua Aaron Levine, University of Arizona (USA), September 2016;
 - ★ Joshua Aaron Levine, Clemson University (USA), May-June 2013;
 - ★ Valerio Pascucci, SCI Institute, University of Utah (USA), May-June 2011;

RESEARCH (continued)

International Publications

Theses

- ★ **Julien Tierny**
“Contributions to Topological Data Analysis for Scientific Visualization”,
Habilitation thesis,
Committee: I. Bloch (President), J.-D. Fekete (Committee), P. Frey (Committee), H. Hagen (Reviewer), C. Johnson (Reviewer), B. Lévy (Reviewer), P. Ricoux (Committee), W. Schroeder (Committee).
Sorbonne Universités UPMC, April 2016.
- ★ **Julien Tierny**
“Reeb graph based 3D shape modeling and applications”,
Ph.D. thesis,
Committee: S. Tison (President), A. Baskurt (Reviewer), B. Lévy (Reviewer), C. Labit (Committee), A. Srivastava (Committee), M. Daoudi (Advisor), J.P. Vandeborre (Co-advisor).
Lille University, October 2008.

Monograph

- ★ **Julien Tierny**
“Topological Data Analysis for Scientific Visualization”,
Springer (Mathematics and Visualization series), 2018.
ISBN 978-3-319-71506-3.

Edited books

- ★ Valerio Pascucci, Xavier Tricoche, Hans Hagen, and **Julien Tierny**,
“Topological Methods in Data Analysis and Visualization: Theory, Algorithms and Applications”, Springer, 2011 (ISBN: 978-3-642-15013-5).

Journals

- ★ Jules Vidal, Joseph Budin, **Julien Tierny**,
“Progressive Wasserstein Barycenters of Persistence Diagrams”,
IEEE Transactions on Visualization and Computer Graphics
Proc. of IEEE VIS 2019.
Best Paper Honorable Mention Award.
- ★ Charles Gueunet, Pierre Fortin, Julien Jomier, **Julien Tierny**,
“Task-based Augmented Contour Trees with Fibonacci Heaps”,
IEEE Transactions on Parallel and Distributed Systems
Accepted, 2019.
- ★ Guillaume Favelier, Noura Faraj, Brian Summa, **Julien Tierny**,
“Persistence Atlas for Critical Point Variability in Ensembles”,
IEEE Transactions on Visualization and Computer Graphics
Proc. of IEEE VIS 2018.
- ★ **Julien Tierny**, Guillaume Favelier, Joshua Levine, Charles Gueunet, Michael Michaux,
“The Topology ToolKit”,
IEEE Transactions on Visualization and Computer Graphics
Proc. of IEEE VIS 2017.
Best Paper Honorable Mention Award.
- ★ Brian Summa, **Julien Tierny**, Valerio Pascucci,
“Visualizing the Uncertainty of Graph-based 2D Segmentation with Min-path Stability”,
Computer Graphics Forum
Proc. of EuroVis 2017.
- ★ Ana Maria Vintescu, Florent Dupont, Guillaume Lavoué, Pooran Memari, **Julien Tierny**,
“Least Squares Affine Transitions for Global Parameterization”,
Journal of WSCG
Accepted, 2017.

RESEARCH (continued)

- ★ Jonas Lukasczyk, Garrett Aldrich, Michael Steptoe, Guillaume Favelier, Charles Gueunet, **Julien Tierny**, Ross Maciejewski, Bernd Hamann, and Heike Leitte, *"Viscous Fingering: A Topological Visual Analytic Approach"*, **Applied Mechanics and Materials** Accepted, 2017.
- ★ **Julien Tierny** and Hamish Carr *"Jacobi Fiber Surfaces for Bivariate Reeb Space Computation"*, **IEEE Transactions on Visualization and Computer Graphics** Proc. of IEEE VIS 2016. **Best Paper Award.**
- ★ Pavol Klacansky, **Julien Tierny**, Hamish Carr, Zhao Geng, *"Fast and Exact Fiber Surfaces for Tetrahedral Meshes"*, **IEEE Transactions on Visualization and Computer Graphics** Presented at IEEE VIS 2016.
- ★ Roberto A. Boto, Julia C. Garcia, **Julien Tierny**, Jean-Philip Piquemal, *"Interpretation of the reduced density gradient"*, **Molecular Physics** 2016, accepted.
- ★ Hamish Carr, Zhao Geng, **Julien Tierny**, Amit Chattopadhyay, Aaron Knoll, *"Fiber Surfaces: Generalizing Isosurfaces to Bivariate Data"*, **Computer Graphics Forum** Proc. of EuroVis 2015, accepted.
- ★ Sujin Philip, Brian Summa, **Julien Tierny**, Peer-Timo Bremer, Valerio Pascucci, *"Distributed Seams for Gigapixel Panoramas"*, **IEEE Transactions on Visualization and Computer Graphics** Accepted, 2014.
- ★ Attila Gyulassy, David Guenther, Joshua Levine, **Julien Tierny**, Valerio Pascucci, *"Conforming Morse-Smale Complexes"*, **IEEE Transactions on Visualization and Computer Graphics** Proc. of IEEE VIS 2014.
- ★ David Guenther, Roberto Álvarez Boto, Julia Contreras Garcia, Jean-Philip Piquemal, **Julien Tierny**, *"Characterizing Molecular Interactions in Chemical Systems"*, **IEEE Transactions on Visualization and Computer Graphics** Proc. of IEEE VIS 2014.
- ★ David Guenther, Joseph Salmon, **Julien Tierny**, *"Mandatory Critical Points of 2D Uncertain Scalar Fields"*, **Computer Graphics Forum**, Proc. of EuroVis 2014.
- ★ Fang Chen, Harald Obermaier, Hans Hagen, Bernd Hamann, **Julien Tierny** and Valerio Pascucci, *"Topology analysis of time-dependent multi-fluid data using the Reeb graph"*, **Computer Aided Geometric Design**, 2013.
- ★ Jean-Marc Thiery, **Julien Tierny**, and Tamy Boubekeur, *"Jacobians and Hessians of Mean Value Coordinates for Closed Triangular Meshes"*, **The Visual Computer Journal**, Ed. Springer, Accepted, 2013.
- ★ **Julien Tierny** and Valerio Pascucci, *"Generalized Topological Simplification of Scalar Fields on Surfaces"*, **IEEE Transactions on Visualization and Computer Graphics**, Proceedings of IEEE VIS 2012.

RESEARCH (continued)

- ★ Brian Summa, **Julien Tierny** and Valerio Pascucci,
"Panorama Weaving: Fast and Flexible Seam Processing",
ACM Transactions on Graphics,
Proceedings of ACM SIGGRAPH 2012.
- ★ Jean-Marc Thiery, **Julien Tierny** and Tamy Boubekeur,
"CageR: Cage-based Reverse Engineering of Animated 3D Shapes",
Computer Graphics Forum,
Accepted 2012, Presented at Eurographics 2013.
- ★ Jean-Marc Thiery, Bert Buchholz, **Julien Tierny** and Tamy Boubekeur,
"Analytic Curve Skeletons for 3D Surface Modeling and Processing",
Computer Graphics Forum,
Proceedings of Pacific Graphics 2012.
- ★ **Julien Tierny**, Joel Daniels II, Luis Gustavo Nonato, Valerio Pascucci and Claudio Silva,
"Inspired Quadrangulation",
Computer Aided Design, Ed. Elsevier,
Proceedings of ACM SPM 2011.
- ★ **Julien Tierny**, Joel Daniels II, Luis Gustavo Nonato, Valerio Pascucci and Claudio Silva,
"Interactive Quadrangulation with Reeb Atlases and Connectivity Textures",
IEEE Transactions on Visualization and Computer Graphics,
Accepted, 2011.
- ★ Tiago Etienne, Luis Gustavo Nonato, Carlos Scheidegger, **Julien Tierny**, Tom Peters, Valerio Pascucci, Mike Kirby and Claudio Silva,
"Topology Verification for Isosurface Extraction",
IEEE Transactions on Visualization and Computer Graphics,
Accepted 2011, Presented at IEEE VIS 2011.
- ★ Peer-Timo Bremer, Gunther Weber, **Julien Tierny**, Valerio Pascucci, Marc Day and John Bell,
"Interactive Exploration and Analysis of Large Scale Simulations Using Topology-based Data Segmentation",
IEEE Transactions on Visualization and Computer Graphics,
Accepted, 2010.
- ★ **Julien Tierny**, Attila Gyulassy, Eddie Simon and Valerio Pascucci,
"Loop surgery for volumetric meshes: Reeb graphs reduced to contour trees",
IEEE Transactions on Visualization and Computer Graphics,
Proceedings of IEEE Visualization 2009.
Volume 15, Number 6, 2009, pp. 1177-1184.
- ★ **Julien Tierny**, Jean-Philippe Vandeboire and Mohamed Daoudi,
"Partial 3D shape retrieval by Reeb pattern unfolding",
Computer Graphics Forum (Eurographics Association), Ed. Blackwell,
Volume 28, Number 1, 2009, pp. 41-55.
- ★ **Julien Tierny**, Jean-Philippe Vandeboire and Mohamed Daoudi,
"Enhancing 3D mesh topological skeletons with discrete contour constrictions",
The Visual Computer Journal Ed. Springer,
Volume 24, Number 3, 2008, pp. 155-172.
- ★ Maxime Soler, Martin Petitfrere, Gilles Darche, Melanie Plainchault, Bruno Conche, **Julien Tierny**,
"Ranking Viscous Finger Simulations to an Acquired Ground Truth with Topology-Aware Matchings",
IEEE Symposium on Large Data Analysis and Visualization 2019.
Best Paper Award.

RESEARCH (continued)

- ★ Thibault Bridel-Bertomeu, Benjamin Fovet, **Julien Tierny**, Fabien Vivodtzev
"Topological Analysis of High Velocity Turbulent Flow",
IEEE Symposium on Large Data Analysis and Visualization 2019 (posters).
- ★ Charles Gueunet, Pierre Fortin, Julien Jomier, **Julien Tierny**,
"Task-based Augmented Reeb Graphs with Dynamic ST-Trees",
Eurographics Symposium on Parallel Graphics and Visualization 2019.
- ★ Martin Falk, Guillaume Favelier, Charles Gueunet, Pierre Guillou, Adhitya Kamakshidasan, Pavol Klacansky, Joshua Levine, Jonas Lukasczyk, Daisuke Sakurai, Maxime Soler, **Julien Tierny**, Will Usher, Jules Vidal, Michal Wozniak,
"An Overview of the Topology ToolKit",
Proc. of TopoInVis 2019
- ★ Max Kontak, Jules Vidal, **Julien Tierny**,
"Statistical Parameter Selection for Clustering Persistence Diagrams",
Proc. of Super Computing workshop on Urgent HPC 2019
- ★ Maxime Soler, Mélanie Plainchault, Bruno Conche, **Julien Tierny**,
"Lifted Wasserstein Matcher for Fast and Robust Topology Tracking",
IEEE Symposium on Large Data Analysis and Visualization 2018.
Best Paper Honorable Mention Award.
- ★ Maxime Soler, Mélanie Plainchault, Bruno Conche, **Julien Tierny**,
"Topologically Controlled Lossy Compression",
IEEE Pacific Conference on Visualization 2018.
- ★ Charles Gueunet, Pierre Fortin, Julien Jomier, **Julien Tierny**,
Task-based Augmented Merge Trees with Fibonacci Heaps,
IEEE Symposium on Large Data Analysis and Visualization 2017.
- ★ Ana Maria Vintescu, Florent Dupont, Guillaume Lavoué, Pooran Memari, **Julien Tierny**,
"Conformal Factor Persistence for Fast Hierarchical Cone Extraction",
Proc. of Eurographics 2017 (short papers).
- ★ Charles Gueunet, Pierre Fortin, Julien Jomier, **Julien Tierny**.
"Contour Forests: Fast Multi-threaded Augmented Contour Trees",
IEEE Symposium on Large Data Analysis and Visualization 2016.
- ★ Sujin Philip, Brian Summa, **Julien Tierny**, Peer-Timo Bremer, Valerio Pascucci.
"Scalable Seams for Gigapixel Panoramas",
Eurographics Symposium on Parallel Graphics and Visualization 2013.
Best Paper Award.
- ★ Mariem Gargouri, **Julien Tierny**, Erwan Jolivet, Philippe Petit, Elsa Angelini.
"Accurate and robust shape descriptors for the identification of rib cage structures in CT-images with Random Forests",
IEEE International Symposium on Biomedical Imaging 2013.
- ★ Jean-Christophe Michelin, **Julien Tierny**, Florence Tupin, Clément Mallet, and Nicolas Paparoditis,
"Quality Evaluation of 3D City Building Models with Automatic Error Diagnosis",
Proc. of ISPRS Conference on SSG 2013.
- ★ Emanuele Santos, **Julien Tierny**, Ayla Khan, Brad Grimm, Lauro Lins, Juliana Freire, Valerio Pascucci, Claudio Silva, Scott Klasky, Roselyne Barreto, Norbert Podhorszki.
"Enabling Advanced Visualization Tools in a Web-Based Simulation Monitoring System",
IEEE International Conference on eScience 2009.

RESEARCH (continued)

- ★ Peer-Timo Bremer, Gunther Weber, **Julien Tierny**, Valerio Pascucci, Marcus Day, John Bell.
"A Topological Framework for the Interactive Exploration of Large Scale Turbulent Combustion",
IEEE International Conference on eScience 2009.
- ★ **Julien Tierny**, Jean-Philippe Vandeborre and Mohamed Daoudi,
"Fast and precise kinematic skeleton extraction of 3D dynamic meshes",
IEEE International Conference on Pattern Recognition 2008, pp. 1-4.
- ★ **Julien Tierny**, Jean-Philippe Vandeborre and Mohamed Daoudi,
"Reeb chart unfolding based 3D shape signatures",
Eurographics 2007, short paper, pp. 13-16.
- ★ **Julien Tierny**, Jean-Philippe Vandeborre and Mohamed Daoudi,
"Topology driven 3D mesh hierarchical segmentation",
IEEE Shape Modeling International 2007, short paper, pp. 215-220.
- ★ **Julien Tierny**, Jean-Philippe Vandeborre and Mohamed Daoudi,
"3D mesh skeleton extraction using topological and geometrical analyses",
Pacific Graphics 2006, pp. 85-94.
- ★ **Julien Tierny**, Jean-Philippe Vandeborre and Mohamed Daoudi,
"Invariant high level Reeb graphs of 3D polygonal meshes",
IEEE 3DPVT 2006, pp. 105-112.

Book chapters

- ★ **Julien Tierny**, David Guenther, and Valerio Pascucci,
"Optimal General Simplification of Scalar Fields on Surfaces",
Chapter of *"Topological and Statistical Methods for Complex Data"*,
Springer, 2014 (ISBN: 978-3-662-44899-1).
- ★ Stefano Berretti, Mohamed Daoudi, Alberto Del Bimbo, Tarik Filali Ansary, Pietro Pala, **Julien Tierny** and Jean-Philippe Vandeborre,
"3D object indexing", chapter of *"3D object processing: compression, indexing and watermarking"*,
Wiley, June 2008 (ISBN: 978-0-470-06542-6).

Invited Conferences

- ★ **Julien Tierny**, Jean-Philippe Vandeborre and Mohamed Daoudi,
"Geometry flavored topological skeletons: applications to shape handling, understanding and retrieval",
Second DELOS Conference, 2007.
- ★ Mohamed Daoudi, Tarik Filali-Ansary, **Julien Tierny** and Jean-Philippe Vandeborre,
"3D mesh models: view-based indexing and structural analysis",
First DELOS Conference, 2007, Lecture Notes in Computer Science, pp. 298-307.

Technical Reports

- ★ Guillaume Favelier, Charles Gueunet, Attila Gyulassy, Julien Jomier, Joshua Levine, Jonas Lukasczyk, Daisuke Sakurai, Maxime Soler, **Julien Tierny**, Will Usher, Qi Wu
"Topological Data Analysis Made Easy with the Topology ToolKit".
IEEE VIS Tutorials 2018.
- ★ Guillaume Favelier, Charles Gueunet, **Julien Tierny**
"Visualizing Ensembles of Viscous Fingers".
IEEE Scientific Visualization Contest 2016.
Honorable Mention Award.
Poster presentation at IEEE VIS 2016.
- ★ Brian Summa, **Julien Tierny**, Peer-Timo Bremer, Giorgio Scorzelli, and Valerio Pascucci,
"Active-Stitching: Beyond Batch Processing of Panoramas", 2013.

RESEARCH (continued)

Patents

- ★ “Seam Network Processing for Panorama Weaving”
Brian Summa, Valerio Pascucci, **Julien Tierny**
US Patent 20,140,002,488.

Distributed Software

- ★ *the Topology ToolKit*
Open-source C++ library and software collection for efficient and generic topological data analysis and visualization of scientific data (BSD license).
<http://topology-tool-kit.github.io>
- ★ *Reeb Space*
Open source library (AGPL license) for bivariate Reeb space computation (implementation of the paper: “Jacobi Fiber Surfaces for Bivariate Reeb Space Computation”).
- ★ *Fiber Surfaces*
Open source library for fiber surface computation (implementation of the paper: “Fast and exact fiber surfaces for tetrahedral meshes”).
- ★ *Generalized Topological Simplification of Scalar Fields on Surfaces*
Open source library (LGPL license) for general topological simplification on surfaces (implementation of the paper: “Generalized Topological Simplification of Scalar Fields on Surfaces”, proc. of IEEE VIS 2012).
- ★ *vtkReebGraph*
Deployment of Reeb graph based visualization techniques into the OpenSource project *Visualization ToolKit* (VTK).
- ★ *SINAMIS Is Not A Mesh Indexing System*,
Benchmarking tools and partial 3D shape retrieval system implementation (paper: “Partial 3D shape retrieval by Reeb pattern unfolding”).

Keynote Speaker

- 2015 ★ IEEE Shape Modeling International, France.

Invited Talks

- 2018 ★ ACM SIGGRAPH, Vancouver, Canada.
★ French conference on computer science and geometry, Lyon, France.
- 2017 ★ ACM SIGGRAPH, Los Angeles, USA.
★ New York University, USA.
★ Topology, Computation and Data Analysis, Dagstuhl, Germany.
★ Conference on Physical Modeling for Virtual Manufacturing Systems and Processes, Germany.
★ Imaging in Paris, Institut Henri Poincaré, France.
★ GdR MASCOT-NUM workshop, Institut Henri Poincaré, France.
★ INRIA Saclay, France.
★ Telecom ParisTech, France.
★ Strasbourg university, France.
- 2016 ★ Heidelberg University, Germany.
- 2015 ★ Tulane University, USA.
- 2014 ★ ENS Cachan CMLA, France.
★ Uncertainty Forum, CEA, France.
★ Franco-Romanian Applied Math Congress, Lyon, France.
★ GdR-ISIS AC3D Workshop, Porquerolles, France.
★ Leeds University, UK.
★ LIRIS, Lyon University, France.

R E S E A R C H (continued)

- 2013 * Ceremade Seminar, Paris Dauphine University, France.
- 2012 * Max Planck Institut für Informatik - Saarbrücken, Germany.
- * Clemson University, USA.
- 2008 * IGG Research Group, LSIT, Strasbourg, France.
- * LAIC Laboratory, Clermont Ferrand, France.
- * Alice Research Group, INRIA Loria, Nancy, France.
- 2006 * Tours University, Tours, France.

Professional service

- Associate Editor * IEEE Transactions on Visualization and Computer Graphics.
- International Program Chair * IEEE Lдав 2019 (full papers).
- * TopoInVis 2019 (full papers).
- * IEEE Lдав 2018 (full papers).
- * IEEE Lдав 2014 (poster track).
- International Program Committee * IEEE VIS 2017-2019 (full papers).
- * EuroVis 2015-2017 (full papers).
- * TopoInVis 2015, 2017 (full papers).
- * EG Symposium on Parallel Graphics and Visualization 2017-2019 (full papers).
- * SuperComputing 2017-2018 (tutorials).
- * IEEE Shape Modeling International 2015 (full papers).
- * EuroVis 2013-2014 (short papers).
- * Eurographics 2012-2013 (short papers).
- * Graphics Replicability Stamp Initiative (2017-).
- International journals * Reviewer for: IEEE Transactions on Visualization and Computer Graphics, Computer Graphics Forum, Computer-Aided Design, Computer-Aided Geometric Design, IEEE Transactions on Image Processing, International Journal of Computer Vision, Theoretical Computer Science, Image and Vision Computing.
- International conferences * Reviewer for: IEEE VIS (2009, 2012-2017), EuroVis (2009, 2013-2017), ACM SIGGRAPH (2012-2013, 2015, 2017), ACM SIGGRAPH Asia (2015), Eurographics (2009-2012, 2015-2017), Pacific Graphics (2011), ACM Solid and Physical Modeling (2008), IEEE Shape Modeling International (2008, 2015), TopoInVis (2013, 2015, 2017), High Performance Graphics (2013), IEEE SIBGRAP (2009), IEEE ICME (2007-2008).
- Recruitment Committee * Permanent research engineer, INRIA Saclay, 2017.
- * Assistant professor in mathematics, applied mathematics or computer science, Sorbonne Universites UPMC, 2016.
- Ph.D. Thesis Reviewer * Steve Petruzza (University of Utah), 2018.
- * Arnaud Bleterrer (Universite Cote d'Azur), 2018.
- Ph.D. Thesis Committee * Maxime Louis (INRIA - Paris), 2019.
- * Roberto Alvarez-Boto (UPMC), 2016.
- * Leo Allemand-Giorgis (INRIA - Grenoble), 2016.
- * Esma Elghoul (INRIA - Rocquencourt), 2014.
- * Maxime Belperin (LIRIS), 2013.
- * Rachid El Khoury (LIFL), 2013.
- * Bertrand Pellenard (INRIA), 2012.
- * Romain Arcila (LIRIS), 2011.
- Fellowship Committee * Fulbright Franco-American Commission (US Department of State), 2011, 2016.
- National conferences * Visu 2012 (**organizer**).
- * Visu 2011-2015 (program committee member).
- * Coresa 2012 (program committee member).

RESEARCH (continued)

Funding agencies	* Reviewer for: European Science Foundation, ANR, Institut Télécom.
National responsibilities	* Co-head of the Visualization work-group (“GT Visu”) of the CNRS GdR IGRV.

ACADEMIC ACTIVITIES

Current teaching activities (around 90 hours per year)

ENS Paris Saclay	* Head instructor for the Topological Data Analysis course (30 hours/year) with Frédéric Chazal, MVA Master (2nd year).
	* Head instructor for the Graphics and Visualization course (24 hours/year) with Marie-Paule Cani and Damien Rohmer, MPRI Master (2nd year).
ENSTA	* Head instructor for the Visualization course (27 hours/year), Master 2 level.
Sorbonne PolyTech	* Head instructor for the Visualization course (35 hours/year), Master 2 level.
Telecom ParisTech	* Introductions to Topological Data Analysis (3 hours) and Scientific Visualization (3 hours).

Past teaching activities

2017	* Winter school on Computational Geometry and Topology for Data Analysis, Nice, France (organizers: Jean-Daniel Boissonnat and Frédéric Chazal).
2014	* ICS summer school on Scientific Visualization, Roscoff, France (organizer: Pascal Frey).
2013-2017	* Head instructor for the Visualization course, Versailles University (UVSQ).
2008-2010	* Teaching fellow at the Computer Science Department of the University of Utah.
2005-2008	* Teaching assistant (“Moniteur”) at the Computer Science Department of Lille University.