Julien Tierny
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4, Place Jussieu,
75005 Paris, France.
eMail: julien.tierny@lip6.fr
Web: http://lip6.fr/Julien.Tierny

Research Scientist

PROFESSIONAL EXPERIENCE

2010-Present ⋆ *CNRS Permanent Researcher*, Topological Data Analysis and Visualization,
2014-Present: Sorbonne Universite, 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 Universites 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. Vandeborre.
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 LDAV 2019;
2018 ⋆ **Best Paper Honorable Mention Award**, IEEE LDAV 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;

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 Universites 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

⋆ Malgorzata Olejniczak, André Severo Pereira Gomes, **Julien Tierny**,
"A Topological Data Analysis Perspective on Non-Covalent Interactions in Relativistic Calculations",
International Journal of Quantum Chemistry
Accepted, 2019.

⋆ 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.

⋆ 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.

R E S E A R C H (continued)

⋆ 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.

⋆ 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 Etiene, 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 Vandeborre 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 Vandeborre 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.

Conferences

⋆ 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.

⋆ 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 Muli-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.

R E S E A R C H (continued)

⋆ 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.

⋆ 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.

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

Professional service

Associate Editor	⋆ IEEE Transactions on Visualization and Computer Graphics.
International Program Chair	⋆ IEEE LDAV 2019 (full papers). ⋆ TopoInVis 2019 (full papers). ⋆ IEEE LDAV 2018 (full papers). ⋆ IEEE LDAV 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 SIBGRAPI (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	⋆ Jonas Lukasczyk (TU Kaiserslautern), 2019. ⋆ Steve Petruzza (University of Utah), 2018.

R E S E A R C H (continued)

⋆ 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).

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.

A C A D E M I C A C T I V I T I E S

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.