Curriculum Vitae

Edoardo Provenzi

Contents

1 General information

1.1 Basics

- Born in Bergamo, Italy, in 1975

- Full Professor at IMB - Institut de Mathématiques de Bordeaux, France - Research group: Analysis

- edoardo.provenzi@math.u-bordeaux.fr, https://www.math.u-bordeaux.fr/~eprovenzi/

1.2 Undergraduate, graduate and PhD studies

- *2001 - 2004*:
  - PhD in Mathematics and applications at Università di Genova under the supervisor of Claudio Bartocci;
  - Title of the thesis: '*A mathematical overview on canonical and covariant loop quantum gravity*', defended on May 3rd, 2004;

- *1994 - 2000*:
  - Degree in Physics (equivalent to a MS) at Università Statale di Milano under the supervision of Maria Cristina Abbati, Alessandro Manià and Renzo Cirelli;
  - Final grade: summa cum laude (in Italian: 110/110 with honors);
  - Title of the thesis: '*On the Loop Transform in Abelian Gauge Theories*', defended on July 10th, 2000;
  - Supervisors: M.C. Abbati, A. Manià, R. Cirelli;

- *1989 - 1994*: Secondary school: Institute C. Pesenti, studies in Electronics and Electrotechnics. Final grade: 60/60.

1.3 Qualifications

- Qualification to 'Professeur des universités' (Full Professor), Section 26 - 'Applied mathematics', Qualification number: 17126232975, February 8th, 2017;

- Habilitation à diriger des recherches (HDR), Université Paris Descartes, 14 Juin 2016. Jury: Julie Delon (president), Jean-Francois Aujol (Referee), Céline Loscos (Referee), Frederic Dufaux, Pascal Mamassian, Laurent Perrinet, Catalina Sbert;

- Habilitation for associate professor in Italian universities, Section ING-INF05 - 09/H1 - 'Sistemi di elaborazione delle informazioni', December 4th 2013;

- Qualification to 'Maître de Conférence' (equivalent to Associate Professor), Section 27 - 'Computer science', Qualification number: 13227232975, February 12th, 2013;

- Qualification to 'Maître de Conférence', Section 26 - 'Applied mathematics', Qualification number: 13226232975, February 5th, 2013;

- Qualification to 'Maître de Conférence' (equivalent to Associate Professor), Section 61 - 'Génie informatique, automatique et traitement du signal', Qualification number: 13261232975, January 31st, 2013;

- Qualification (ANECA) to teach and perform research as Associate Professor and Assistant Professor in all universities of Spain, July 23th, 2012.

2 Short chronological bio

- I received the 'Laurea' (equivalent to a Master Degree) in Physics in 2000 from Università di Milano (Italy) and the PhD in Mathematics in 2004 from Università di Genova (grant given in associated with Politecnico di Torino - Italy), spending the academic year 2002-2003 at the University of California Riverside (USA) performing research under the supervision of Prof. John Baez. Both the master and the PhD thesis have been devoted to the study of Quantum Gravity;

- After the PhD I joined the computer vision group of the Università di Milano (Italy) with a four-years Post-Doc position (2004, November 1st - 2008, October 31th) to study the problem of color perception and its representation in digital images, in particular the Retinex model;

- In 2008 I received the five-years 'Ramón y Cajal' grant from the Spanish ministry of education, and I performed research in the group of Prof. Vicent Caselles of the University Pompeu Fabra of Barcelona, Spain (2008, December 1st - 2013, March 31th);

- In 2012 I received the international award for *"the most outstanding paper on mathematical and computational aspects of imaging, broadly interpreted"*, by the SIAM (Society of Industrial and Applied Mathematics) Group on Imaging Science (SIAG/IS) for a paper co-authored with R. Palma, M. Bertalmío and V. Caselles;

- I have been Post-Doc researcher at Telecom-ParisTech, Paris, France, during the period April 2013-August 2014;

- I joined department of mathematics of Université Paris Descartes, France, as Associate Professor on September 1st, 2014;

- I joined the institute of mathematics of Université de Bordeaux, France, as Full Professor on September 1st, 2017;

- My primary research interest is the theoretical modeling of human vision and its applications. The mathematical techniques involved in this study come from different disciplines: functional and harmonic analysis, differential and hyperbolic geometry and, in particular, tools from mathematical physics such as variational principles, quantum information, relativity and gauge field theory.

I consider teaching and scientific outreach as important as research.

2.1 Speaking in tongues

- *English*: Full professional proficiency;
- *French*: Full professional proficiency;
- *Italian*: Mother tongue;
- *Spanish*: Full professional proficiency.

3 Research

3.1 Publications

The list of publications is subdivided in four items:

- Scientific peer-reviewed journals
- Books and book chapters
- Conference proceedings
- Scientific outreach.

3.1.1 Scientific peer-reviewed journals

34. M. Berthier, N. Prencipe, E. Provenzi: '*Split-quaternions for perceptual white balance*', accepted with minor revision by IEEE Signal Processing Magazine on October 2023. Online version: https://hal.science/hal-04149289;

33. M. Aldé, M. Berthier, E. Provenzi: '*The classification of rebit quantum channels*', Journal of Physics A: Mathematical and Theoretical, vol 56, 495301, 1-17, 2023;

32. M. Berthier, E. Provenzi: '*On the questionable use of CIE L* to infer geometric properties of achromatic perception*', Color Research and Applications, Vol. 48(6), 655-661, November/December 2023;

31. M. Berthier, N. Prencipe, E. Provenzi: '*A quantum information-based refoundation of color perception concepts*', SIAM Journal on Imaging Sciences, vol. 15(4), 1944-1976, November 2022;

30. M. Berthier, E. Provenzi: '*Quantum measurement and color perception: theory and applications*', Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 478: 20210508, February 2022;

29. N. Prencipe, E. Provenzi: '*Geometric models for color perception*', Color Culture and Science Journal, vol. 13 (2), 42-28, September 2021.

28. M. Berthier, V. Garcin, N. Prencipe, E. Provenzi: '*The relativity of color perception*', Journal of Mathematical Psychology, vol. 103, pages 102562, August 2021;

27. M. Berthier, E. Provenzi: '*Hunt's Colorimetric Effect from a Quantum Measurement Viewpoint*'. In: Nielsen F., Barbaresco F. (eds) Geometric Science of Information. GSI 2021. Lecture Notes in Computer Science, vol 12829, 172-180, Springer Nature Switzerland AG 2021;

26. M. Berthier, E. Provenzi: '*From Riemannian trichromacy to quantum color opponency via hyperbolicity*', Journal of Mathematical Imaging and Vision, vol. 63, pages 681–688, February 2021;

25. M. Berthier, E. Provenzi: '*The quantum nature of color perception: Uncertainty relations for chromatic opposition*', J. Imaging, vol 7, 40, 1-23, February 2021;

24. E. Provenzi: '*On the issue of linearity in chromatic induction by a uniform background*'. Coloration Technology, vol 137, 68-71, November 2020;

23. N. Prencipe, V. Garcin, E. Provenzi: '*Origins of hyperbolicity in color perception*'. J. Imaging, special issue on Mathematical Models of Visual Perception and Biology with Applications to Images Processing and Computer Vision, vol 6, 42, 1-19, June 2020;

22. E. Provenzi: '*Geometry of color perception. Part 1: Structures and metrics of a homogeneous color space*', Journal of Mathematical Neuroscience, special issue on Color representation and cortical-inspired image processing, vol 10, 1-19, May 2020;

21. Y. Jang, J. Bigot, E. Provenzi: '*Commutativity of chromatic covariance matrices in natural image statistics*', Mathematics in Engineering, vol. 2(2), 313-339, December 2019;

20. M. Berthier, E. Provenzi: '*When Geometry Meets Psycho-Physics and Quantum Mechanics: Modern Perspectives on the Space of Perceived Colors*'. In: Nielsen F., Barbaresco F. (eds) Geometric Science of Information. GSI 2019. Lecture Notes in Computer Science, vol 11712, 621-630, Springer Nature Switzerland AG 2019;

19. E. Provenzi: '*Formalizations of the retinex model and its variants with variational principles and partial differential equation*'. Journal of electronic imaging, vol. 27, 011003, 2017;

18. E. Provenzi: '*Color Space Axioms and Fiber Bundles*', Sensors & Transducers, Vol. 215, Issue 8, 43-46, August 2017;

17. G. Gronchi, E. Provenzi: '*A variational model for context-driven effects in perception and cognition*', Journal of Mathematical Psychology vol. 77, 124-141, April 2017;

16. J. Chauvin, E. Provenzi: '*SLMRACE: A noise-free new RACE implementation with reduced computational time*', J. Electron. Imaging vol. 26(3), 031202, 2017;

15. E. Provenzi: '*A differential geometry model for the perceived colors space*', International Journal of Geometric Methods in Modern Physics, vol. 13(8), 1630008, 1-8, September 2016;

14. E. Provenzi, J. Delon, B. Mazin, Y. Gousseau: '*On the Relationship Between Second Order Stationarity and Spatiochromatic Covariance Properties of Natural RGB Images*', Vision Research, special issue 'Vision and the Statistics of the Natural Environment', vol. 120, 22-38, March 2016;

13. S. Ferradans, R. Palma-Amestoy, E. Provenzi: '*An algorithmic analysis of variational models for perceptual local contrast enhancement*', Image Processing On Line (IPOL), 5, 219-233, 2015;

12. E. Provenzi, V. Caselles: '*A Wavelet Perspective on Variational Perceptually-Inspired Color Enhancement*', International Journal of Computer Vision (IJCV), vol. 106(2), 153-171, 2014;

11. E. Provenzi: '*Boosting the Stability of Wavelet-Based Contrast Enhancement of Color Images Through Gamma Transformations*', Journal of Modern Optics, special issue 'Photometry, Colorimetry and Radiometry: Issues and Application', vol. 60(4), 1145-1150, December 2013;

10. S. Ferradans, M. Bertalmío, E. Provenzi, V. Caselles: '*An analysis of visual adaptation and contrast perception for tone mapping*', IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), 33(10), 2002-2012, October 2011;

9. N. Papadakis, E. Provenzi, V. Caselles: '*A Variational Model for Histogram Transfer of Color Images*', IEEE Transactions on Image Processing (TIP), 20(6), 1682-1695, May 2011;

8. L. Zappella, X. Lladò, E. Provenzi, J. Salvi: '*Enhanced Local Subspace Affinity for Feature-Based Motion Segmentation*', Pattern Recognition (PR), 44 (2), 454-470, February 2011;

7. M. Bertalmío, V. Caselles, E. Provenzi: '*Issues about Retinex Theory and Contrast Enhancement*', International Journal of Computer Vision (IJCV), 83, 101-119, March 2009;

6. R. Palma-Amestoy, E. Provenzi, M. Bertalmío, V. Caselles: '*A perceptually inspired variational framework for color enhancement*', IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), 31 (3), 458-474, March 2009. *Award for the most outstanding paper on mathematical and computational aspects of imaging, broadly interpreted*, by the SIAM (Society of Industrial and Applied Mathematics) Group on Imaging Science (SIAG/IS);

5. E. Provenzi, C. Gatta, M. Fierro, A. Rizzi: '*A Spatially Variant White Patch and Gray World Method for Color Image Enhancement Driven by Local Contrast*', IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), 30 (10), 1757-1770, October 2008;

4. M. Bertalmío, V. Caselles, E. Provenzi, A. Rizzi: '*Perceptual Color Correction Through Variational Techniques*', IEEE Transactions on Image Processing (TIP), 16 (4), 1058-1072, April 2007;

3. E. Provenzi, M. Fierro, A. Rizzi, L. De Carli, D. Gadia, D. Marini: '*Random Spray Retinex: a new Retinex implementation to investigate the local properties of the model*', IEEE Transactions on Image Processing (TIP), 16 (1), 162-171, January 2007;

2. E. Provenzi, L. De Carli, A. Rizzi, D. Marini: '*Mathematical definition and analysis of the Retinex algorithm*", Journal of Optical Society of America (JOSA) A, 22, 2613-2621, December 2005;

1. M.C. Abbati, A. Manià , E. Provenzi: '*Inductive construction of the loop transform for Abelian gauge theories*', Letters in Mathematical Physics, Vol.57 (1) 69-81, July 2001.

3.1.2 Books and book chapters

7. E. Provenzi (Author): '*Rivoluzioni matematiche: il teorema di Noether*', Le Scienze (Italian edition of Scientific American), July 2023, 145 pages;

6. E. Provenzi (Author): English version: '*From Euclidean to Hilbert spaces. An introduction to functional analysis and its applications*'. French version:'*Des espaces Euclidiens aux espaces de Hilbert. Une introduction à l'analyse fonctionnelle et à ses applications*', Wiley & Sons, 2021, 370 pages;

5. P. Arias, C. Ballester, B. Coll, J. M. Mazón and E. Provenzi: *L'aportació de Vicent Caselles al món de les matemàtiques i l'aplicació al processament d'imatges*, Butlletí de la Societat Catalana de Matemàtiques, Vol. 33, núm. 1, 2018, pages 5–41. DOI: 10.2436/20.2002.01.78

4. E. Provenzi (Editor): '*Color Image Processing*', MDPI Journal of Imaging, 240 pages, May 2018;

3. E. Provenzi (Author): '*Computational Color Science − Variational Retinex-like Methods*', Wiley & Sons, 142 pages, March 2017;

2. E. Provenzi: '*Spatial and Frequency-based Variational Methods for Perceptually Inspired Color and Contrast Enhancement of Digital Images*', Chapter 5 of the book: '*Color Image and Video Enhancement*', E. Celebi, M. Lecca, B. Smolka (Eds.), 131-154, Springer International Publishing, August 2015;

1. E. Provenzi: '*Introduction to the loop quantization of gauge theories and gravity*', Università di Torino, Quaderno didattico e di ricerca ♮14, Department of Mathematics, November 2002. 96 pages.

3.1.3 Conferences

40. E. Provenzi: '*Advances in a Quantum Information-based Color Perception Theory*', IMACS2023 Book of Abstracts, IMACS Series in Computational and Applied Mathematics v. 23, 2023, IMACS, Rome, ISSN 10-98-870X;

39. E. Provenzi: '*A quantum model of color perception*', GDR Vision, Toulouse, France, 26-27 January 2023;

38. Karlo Koščević, Vedran Stipetić, Edoardo Provenzi, Nikola Banić, Marko Subašić, Sven Lončarić: '*HD-RACE: Spray-based Local Tone Mapping Operator*', Proceedings of the ISPA conference, Zagreb, pages 254-269, September 2021;

37. N. Prencipe, E. Provenzi: '*Embedding Naka-Rushton's equation in the geometric setting of Möbius transformations*', Proceedings of the ISPA conference, Zagreb, pages 259-263, September 2021;

36. M. Berthier, E. Provenzi: '*Hunt's colorimetric effect from a quantum measurement viewpoint*', 5th conference on Geometric Science of Information, 21-23 July 2021, Paris France;

35. A. Guennec, N. Prencipe, E. Provenzi: '*Color correction with Lorentz boosts*', The 4th International Conference on Image and Graphics Processing, ICIGP, Sanya, China, January 1-3, 2021. Award for the best presentation of the session.

34. N. Prencipe, E. Provenzi: '*Modelli geometrici della percezione dei colori*', Italian conference on color, 3-4 September 2020, Bergamo, Italy;

33. E. Provenzi: '*A variational model for achromatic induction*', GDR Vision-ISIS Meeting about Biological and artificial vision in image processing and learning, 10-11 October 2019, Marseille, France;

32. M. Berthier, E. Provenzi: '*When geometry meets psycho-physics and quantum mechanics: Modern perspectives on the space of perceived colors*', 4th conference on Geometric Science of Information, 27-29 August 2019, Toulouse, France;

31. B. Mazin, E. Provenzi: '*An alternative multiscale framework for variational perceptually-inspired contrast enhancement of color images*', Color Imaging Conference (CIC26), Vancouver, Canada, 12-16 November 2018;

30. E. Provenzi, G. Gronchi: '*A variational framework for achromatic induction and other psychophysical context-driven effects*', the 2018 Meeting of the European Mathematical Psychology Group (EMPG 2018), Genova, Italy, 30 July - 2 August 2018;

29. E. Provenzi, G. Gronchi: '*Context-driven effects in perception and cognition: A variational approach*', the 50th Annual Meeting of the Society for Mathematical Psychology, Warwick, UK, 23-25 July 2017;

28. E. Provenzi: '*Principal Fiber Bundles and Geometry of Color Spaces*', The Second International Conference on Advances in Signal, Image and Video Processing, Barcelona, Spain, 21-25 May 2017;

27. E. Provenzi: '*Similarities and differences in the mathematical formalizations of the Retinex model and its variants*', Computational Color Imaging Workshop, CCIW, Milan, 29-31 Mars 2017. Springer International Publishing, LNCS 10213, pp. 55–67, 2017. DOI: 10.1007/978-3-319-56010-6 5;

26. L. Grementieri and E. Provenzi: '*Selection of achromatic and non-neutral colors to fill lacunae in frescoes guided by a variational model of perceived contrast*', Proc. SPIE 10225, Eighth International Conference on Graphic and Image Processing (ICGIP 2016), 29-31 October 2016, 102251Z (February 8, 2017); doi:10.1117/12.2267773;

25. A. Flachot, E. Provenzi, J.Kevin O'Regan: '*An illuminant-independent analysis of reflectance as sensed by humans, and its applicability to computer vision*', 6th European Workshop on Visual Information Processing (EUVIP), Marseille, France, 25-27 October, 2016. DOI: 10.1109/EU-VIP.2016.7764601. Best student paper award;

24. A. Flachot, J.Kevin O'Regan, E. Provenzi: '*A simple way the human visual system could extract surface reflectance properties: applications to color naming and unique hues*', poster session for Seeing Colors: International Symposium on Color Vision, Regensburg, Germany, 19-21 Septembre, 2016;

23. G. Gronchi, E. Provenzi: '*Variational achromatic induction and beyond*', Proceedings of the XII Italian conference on color, Turin, Italy, 8-9 September, 121-128, 2016;

22. V. Hulusic, G. Valenzise, E. Provenzi, K. Debattista, F. Dufaux: '*Perceived Dynamic Range of HDR Images*', DOI: 10.1109/QoMEX.2016.7498953. Qomex conference on image quality, Lisbon, Portugal, 6-8 May, 2016;

21. J.L. Lisani, A.B. Petro, E. Provenzi, C. Sbert: '*A generalized white-patch model for fast color cast detection in natural images*', IS&T International Symposium on Electronic Imaging 2016, in the Color Imaging: Displaying, Processing, Hardcopy, and Applications Conference. San Francisco, USA, 14-18 February, 2016. RETINEX 318.1-318.4.

20. E. Provenzi, J. Delon, Y. Gousseau, B. Mazin: '*On Spatiochromatic Features in Natural Images Statistics*', Proceedings of the 18th Image Analysis and Processing Conference (ICIAP), Genoa, Italy, September 7-11, 2015, Part II, 46-55, Lecture Notes in Computer Science, Springer;

19. E. Provenzi, J. Delon, Y. Gousseau, B. Mazin: '*Composantes principales spatio-chromatiques des images naturelles couleur*', XXV Colloque Gretsi, Lyon, France, 9-11 September 2015;

18. E. Provenzi: '*The space of perceived color: a model based on differential geometry*', Workshop on Variational principles and conservation laws in General Relativity, Turin, Italy, 25-26 June 2015;

17. E. Provenzi, J. Delon, Y. Gousseau, B. Mazin: '*On the second order spatiochromatic structure of natural images*', GDR-Vision, Groupement de recherche en vision, Lyon 1-2 December 2014;

16. E. Provenzi, J. Delon, Y. Gousseau, B. Mazin: '*Second order stationarity and spatiochromatic properties of natural images*', 10th International Conference on Signal Image Technology, Workshop on Color and Multispectral Imaging, Marrakech, Maroc, 22-27 November 2014, 598-605;

15. E. Provenzi: '*Achromatic induction: A variational interpretation of Rudd-Zemach's edge integration model*', The 9th International Conference on Signal Image Technology, Workshop on Color and Multispectral Imaging, Kyoto, Japan, 2-5 December 2013, 424-429;

14. E. Provenzi: '*Recent advances in perceptually-inspired variational processing of color images*', Proceedings of the Ninth Italian conference on color, September 19-20, 2013, Florence, Italy, Vol. IX B, 20-27;

13. E. Provenzi: '*A Variational Wavelet-Based Computational Model for the Enhancement of Contrast Perception in Color Images*', Computational Color Imaging Workshop (CCIW), Chiba, Japan, March 4th-5th, 2013. Published on Springer Verlag Lecture Notes in Computer Science (LNCS), Volume 7786, 324-333, 2013.

12. E. Provenzi: '*A wavelet perspective on perceptual color correction of digital images*', Proceedings of the Eighth Italian conference on color, September 13-14, 2012, Bologna, Italy, Vol. VIII B, 11-18;

11. E. Provenzi, V. Caselles: '*Embedding color perception into a variational framework*', European Conference on Visual Perception (ECVP), September 2-6 2012, Alghero, Italy;

10. E. Provenzi, V. Caselles: '*Variational Principles and Perceptual Color Correction of Digital Images*', Proceedings of the conference Predicting Perception, Third International Conference on Appearance, April 17-19 2012, Edinburgh, UK, 162-164;

9. E. Provenzi, V. Caselles: '*An artifact free wavelet Model For Perceptual Contrast Enhancement Of Color Images*', 2012 VISAPP conference, February 24-26, Rome, Italy, SciTePress, 317-322;

8. S. Ferradans, M. Bertalmío, E. Provenzi, V. Caselles: '*Generation of HDR Images in Non-Static Conditions Based On Gradient Fusion*', 2012 VISAPP conference, February 24-26, Rome, Italy, SciTePress, 31-37;

7. L. Zappella, E. Provenzi, X. Lladò, J. Salvi: '*Adaptive Motion Segmentation Algorithm Based on the Principal Angles Configuration*', 10th ACCV Conference, Queenstown, New Zealand, November 8th-10th 2010. Springer Verlag Lecture Notes in Computer Science, Vol. 6494 (3), 15-26, 2011;

6. E. Provenzi, M. Bertalmío, V. Caselles: '*Un marco teórico variacional para la corrección de imágenes en color*', Proceedings of the 9th Spanish conference on color, University of Alicante, June 29-July 2 2010, 82-84. *Award for the best presentation of the conference*;

5. E. Provenzi: '*A unified variational framework for perceptually inspired color correction algorithms*', Proceeding of the CREATE conference on color, Gjovik, Norway, June 2-4 2010, 48-51;

4. S. Ferradans, M. Bertalmío, E. Provenzi, V. Caselles: '*A multi-modal approach to perceptual tone mapping*', Proceedings of the Conference on Visual Media Production (CVMP), London (UK), 81-90, November 12-13 2009, 81-90;

3. E. Provenzi: '*Perceptual color correction: a variational perspective*', Second Computational Color Imaging Workshop (CCIW), Saint Etienne, France, March 26-27, 2009. Published in Springer Verlag Lecture Notes in Computer Science (LNCS), Volume 5646, 109-119, 2009;

2. E. Provenzi, M. Rossetti: '*Spray formulation of Retinex and chromatic noise*', Acts of the second Italian conference about color, Università degli studi di Milano Bicocca (Italy), September 20-22 2006, 55-65;

1. M. Fierro, E. Provenzi: '*Mathematical formulation of the Retinex algorithm: analysis of the intrinsic properties of the model*', Acts of the First Italian Conference on Color, Università degli studi di Pescara, 39-46, October 20-21, 2005.

3.1.4 Scientific outreach

4. Radio interview at Radio3Scienza, December 30th, 2021

3. E. Provenzi: 'La matematica del colore', series of 6 episodes about the use of mathematics in color science, published on MathMadds! http://maths.simai.eu/la-matematica-del-colore/, 2021

2. The spin-off of dedicated to the history of mathematics in color science, again published on Math-Madds! https://maddmaths.simai.eu/matematica/colore-inizio, 2023, with Valentina Roberti

1. E. Provenzi: '*Images : des applications inattendues*', Revue Tangente, 48-49, 2020.

3.2 Awards

8. Promotion to the first class of full professor in France by the CNU (Conseil National des Universités), section 26 (Applied Mathematics), May 2023

7. Best presentation of the session for the paper '*Color correction with Lorentz boosts*', A. Guennec, N. Prencipe and E. Provenzi at the 4th International Conference on Image and Graphics Processing, ICIGP, Sanya, China, January 1-3, 2021

6. Grant PEDR ('Prime d'Encadrement Doctorale et de Recherche') for excellence in doctoral supervision and research: October 1st 2017-September 31st 2021, renewed October 1st 2021-September 31st 2025

5. Best student paper award 'An illuminant-independent analysis of reflectance as sensed by humans, and its applicability to computer vision', with Alban Flachot (student) and J. Kevin O'Regan, in the conference EUVIP, Marseille, 25-27 October 2016

4. Best poster award, together with Giuseppe Valenzise, Journée Futur et Ruptures, Télécom ParisTech, Paris, France, Mars 5th 2015

3. The paper '*A perceptually inspired variational framework for color enhancement*', IEEE Transactions on Pattern Analysis and Machine Intelligence, 31(3), 458-474, March 2009 received the *award for the most outstanding paper on mathematical and computational aspects of imaging, broadly interpreted, published between 2008 and 2011*, by the SIAM (Society of Industrial and Applied Mathematics) Group on Imaging Science (SIAG/IS). Ceremony held in Philadelphia, USA, on May 20th, 2012

2. Certificate of excellence in research by the Spanish Ministry of Research and Development, January 18th, 2013

1. Award for the best presentation of the ninth Spanish conference on color, University of Alicante, June 29th - July 2nd 2010.

3.3 Grants and research projects

17. Grant CIFRE with Huawei Nice Sophia Antipolis for a fully founded PhD thesis (Gabriel Niebel) on quantum information applied to color perception, December 2023-November 2026;

16. Grant Erasmus+ to teach a master-PhD cours level about differential geometry of color vision at the University of Turin, Italy, faculty of Mathematics, 2020;

15. Grant CIFRE with Huawei Nice Sophia Antipolis for a fully founded PhD thesis (Nicoletta Prencipe) on the geometry of color perception, December 2019-November 2022;

14. Grant 'GOALVision' by CNRS (80 primes), 2019: Research leader: Edoardo Provenzi;

13. Grant Erasmus+ to teach a master-PhD cours level about the geometry of color vision at the University of Padova, Italy, faculty of Mathematics, 2019;

12. Grant 'RECOGER' by Nouvelle Aquitaine region, to co-found a PhD thesis, 2018: Research leader: Edoardo Provenzi;

11. Grant 'INFINITI' for interdisciplinary research, by CNRS (Conseil National Recherche Scientifique), 2018: Research leader: Edoardo Provenzi;

10. Grant 'BOUM' SMAI (Société de Mathématiques Appliquées et Industrielles), 2016: Research leader: Edoardo Provenzi;

9. Programme Futur et Ruptures, Fondation Télécom, April 1st 2014 - August 31st 2014. Research leader: Giuseppe Valenzise;

8. FUI (9th call) project CEDCA, at Télécom ParisTech, April 1st 2013 - March 31st 2014. Research leader: Yann Gousseau;

7. GRC project 2009 SGR 773, founded by Generalitat de Catalunya, at Universitat Pompeu Fabra, January 2009 - December 2013. Research leader: Vicent Caselles;

6. MTM2009-08171, founded by MICINN, at Universitat Pompeu Fabra, January 2009 - December 2012. Research leader: Vicent Caselles;

5. IP-RACINE CN 511316 IV PM, founded by Generalitat de Catalunya, at Universitat Pompeu Fabra, June 2007-September 2007. Research leader: Josep Blat;

4. PRIN-MIUR 2005115173-002, at Università degli studi di Milano, January 2006-December 2007. Research leader: Daniele Marini;

3. Modelli computazionali avanzati della percezione visiva per la riproduzione di immagini multi-spettrali e spettrofotometriche ad alta dinamica, COFIN 2005, January 2005-December 2006. Research Leader: Alessandro Rizzi.

2. Geometry of completely integrable Hamiltonian systems, at Università di Genova, January 2002-December 2002. Research leader: Claudio Bartocci;

1. Field theory, superstrings and supergravity PRIN MIUR 20011025-492, at Università degli studi di Milano, January 2001-December 2002. Research leader: Luciano Girardello.

4 Teaching

4.1 Support for students

- Analysis 1 and numerical methods: 166 pages (in Spanish);

- Analysis 2 and numerical methods: 106 pages (in Spanish);

- Color image processing: 125 pages (in English);

- Convex optimization: 72 pages (in French);

- Differential geometry and applications to physics: 425 pages (in English);

- Fourier transform and applications: 125 pages (in French);

- Functional analysis: 279 pages (in French);

- Wavelet theory: 51 pages (in French).

4.2 Courses

- Academic Year 2023/2024:
  - Université de Bordeaux, France. Courses:
    * *Functional analysis*, January-April 2021, 58h, full responsibility of the course, 3rd year;
    * *The mathematics of special relativity*, November 2023, 6h, PhD course.

- Academic Year 2022/2023:
  - Université de Bordeaux, France. Courses:
    * *Analysis 2*, September-December 2022, 32h, full responsibility of the course, 2nd year;
    * *Linear algebra 2*, September-December 2022, 42h, teaching Assistant, 2nd year;
    * *Functional analysis*, January-April 2021, 24h, full responsibility of the course, 3rd year.

- Academic Year 2021/2022:
  - Université de Bordeaux, France. Courses (full responsibility of all the courses):
    * *Functional analysis*, January-April 2021, 24h, 3rd year;
    * *Applications of Hilbert methods and wavelet theory*, January-April 2021, 56h, 4th year;
    * *The role of Jordan algebras in quantum mechanics and color perception*, February 2021, 4h, PhD course.

- Academic Year 2020/2021:
  - Université de Bordeaux, France. Courses (full responsibility of all the courses):
    * *Hilbert spaces and Fourier transform*, January-April 2021, 24h, 3rd year;
    * *Applications of Hilbert methods and wavelet theory* January-April 2021, 56h, 4th year.

- Academic Year 2019/2020:
  - Université de Bordeaux, France. Courses (full responsibility of all the courses):
    * *Hilbert spaces and Fourier transform*, January-April 2020, 24h, 3rd year;
    * *Applications of Hilbert methods and wavelet theory* January-April 2020, 58h, 4th year.

- Academic Year 2018/2019:
  - Université de Bordeaux, France. Courses (full responsibility of all the courses):
    * *Hilbert spaces and Fourier transform*, January-April 2019, 24h, 3rd year;
    * *Convex optimization and inverse problems* January-April 2019, 21h, 4th year;
    * *Introduction to image processing* January-April 2019, 28h, 3rd year;
    * *Applications of Hilbert methods and wavelet theory* January-April 2019, 58h, 4th year.

- Academic Year 2017/2018:

  - Courses (full responsibility of all the courses):
    * *Hilbert spaces and Fourier transform*, January-April 2018, 24h, 3rd year;
    * *Convex optimization and inverse problems* January-April 2018, 56h, 4th year;
    * *Introduction to image processing* January-April 2018, 46h, 3rd year;
    * *Hilbert methods and wavelets* January-April 2018, 58h, 4th year.

- Academic Year 2016/2017:

  - Université Paris Descartes, Paris, France. Courses:
    * *Analytical methods for Engineering* (full responsibility of the course), September 2016-December 2016, 42h, 3rd year;
    * *Variational methods for image processing* (Teaching Assistant) September 2016-December 2016, 10h, 4th year;
    * *Fourier analysis and its applications* (full responsibility of the course), January-March 2017, 60h, 3rd year.
  - ENS Ulm, Paris France. Course: *Algebra and Analysis* for the Cogmaster, Master in Cognitive Psychology, September 2016 and February 2017, (full responsibility), 40h, 1st year of Master.

- Academic Year 2015/2016:

  - Université Paris Descartes, Paris, France. Courses:
    * *Analysis 1*, September 2015-December 2015; (teaching assistant), 72h, 1st year;
    * *Variational methods for image processing* (teaching assistant) September 2016-December 2016, 10h, 4th year;
    * *Fourier analysis and its applications* (full responsibility of the course), January-March 2017, 60h, 3rd year.
  - ENS Ulm, Paris France. Course: *Algebra and Analysis* for the Cogmaster, Master in Cognitive Psychology, September 2016 and February 2017, (full responsibility), 24h, 1st year of Master.

- Academic Year 2014/2015:

  - Université Paris Descartes, Paris, France. Courses:
    * *Analysis 1*, September 2015-December 2015; (teaching assistant), 72h, 1st year;
    * *Variational methods for image processing* (teaching assistant) September 2016-December 2016, 10h, 4th year;
    * *Fourier analysis and its applications* (full responsibility of the course), January-March 2017, 60h, 3rd year.

- Academic Year 2012/2013:

  - Universitat Pompeu Fabra, Barcelona, Spain.
    Courses:
      * *Analysis 1 and 2 and numerical methods* (full responsibility of the course), September 2012-March 2013, 72h, 1st year;
      * *Processing of color digital images* (full responsibility of the course) January 2013-March 2013, 18h, 4th year.

- Academic Year 2011/2012:

  - Universitat Pompeu Fabra, Barcelona, Spain.
    Courses:
      * *Analysis 2* (full responsibility of the course), February-April 2012, 36h, 1st year;
      * *Differential equations* (full responsibility of the course), April-June 2012, 36h, 1st year;
      * *Precalculus* (full responsibility of the course), September 2011, 32h, 1st year.

- Academic Year 2010/2011:

  - Universitat Pompeu Fabra, Barcelona, Spain. Courses:
      * *Analysis 2* (teaching assistant), February-April 2012, 14h, 1st year;
      * *Differential equations* (full responsibility of the course), April-June 2012, 36h, 1st year;
      * *Precalculus* (full responsibility of the course), September 2011, 32h, 1st year.

- Academic Year 2009/2010:

  - Universitat Pompeu Fabra, Barcelona, Spain. Courses:
      * *Differential equations* (full responsibility of the course), April-June 2012, 36h, 1st year;
      * *Precalculus* (full responsibility of the course), September 2011, 46h, 1st year.

- Academic Year 2008/2009:

  - Universitat Pompeu Fabra, Barcelona, Spain. Courses:
      * *Precalculus* (full responsibility of the course), September 2011, 90h, 1st year.

- Academic Year 2007/2008:

  - Universitat Pompeu Fabra, Barcelona, Spain. Courses:
      * *Research Seminar 2* (full responsibility of the course), April-June 2012, 28h, 1st year;
      * *Precalculus* (full responsibility of the course), September 2011, 46h, 1st year.

- Academic Year 2006/2007:

  - Università di Bergamo, Italy. Courses:
      * *Precalculus* (full responsibility of the course), September 2011, 30h, 1st year.

- Academic Year 2004/2005:

  - Politecnico di Milano, Italy. Course: *Linear Algebra, Analysis I* (Teaching Assistant), 32h, 1st year;
  - Università di Bergamo, Italy. Course: *Precalculus* (full responsibility of the course), 30h, 1st year.

- Academic Year 2003/2004:

  - Università di Bergamo, Italy. Courses: *Precalculus* (full responsibly of the course), 30h, 1st year, and *Linear Algebra, Analysis 1, Analysis 2, Physics 2* (Teaching Assistant), 60h, 1st year;
  - Politecnico di Milano, Italy. Courses: *Linear Algebra, Analysis I, Analysis II* (Teaching Assistant), 32h, 1st year.

5 International experience

5.1 Invited speaker

58. 2023, May 3rd: Seminar: 'Quantum information and color perception', University of Pisa, Department of Mathematics, Italy;

57. 2023, February 14th: Seminar: 'Quantum information and color perception', University of Bergamo, Faculty of Engineering, Italy;

56. 2022, June 28th: Seminar: 'Color perception from a quantum measurement viewpoint', CNR-Institute for Application of Analysis (IAC), Rome, Italy;

55. 2021, October 20th: 2 hours lesson given within the Color Imaging Conference (CIC28), online, '*A quantum-relativistic model of color perception*';

54. 2021, September 29th. Seminar: 'A quantum measurement point of view on color perception', Department of Mathematics of the University of Padova, Italy;

53. 2021, September 23rd. Seminar: 'A quantum measurement point of view on color perception', Department of Mathematics of the University of L'Aquila, Italy;

52. 2021, May 28th. Invited talk at the meeting of UMI (Unione Matematica Italiana), 'A quantum-relativistic model of color perception';

51. 2021, January 20th. Invited talk at the kick off meeting of the research group MIVA 'Mathematics of Imaging and Vision with applications';

50. 2021, January 14th. Invited talk for the Colloquium of the University of Mathematics of L'Aquila: 'Towards a relativistic quantum theory of color perception';

49. 2020, November 4th: 2 hours lesson given within the Color Imaging Conference (CIC28), online, '*Spatial color perception and image processing*';

48. 2020, September 16th. Keynote talk: 'Towards a relativistic quantum theory of color perception', CVCS, Gjovik, Norway;

47. 2019, October 22th: 2 hours lesson given within the Color Imaging Conference (CIC27), Paris, France '*Spatial color percetion and image processing*';

46. 2019, September 25th. Plenary speaker: '*Towards a new model for the space of perceived colors*', 11th International Symposium on Image and Signal Processing and Analysis, Dubrovnik, Croatia;

45. 2019, September 18th. Seminar: '*A multiscale framework for variational perceptually-inspired tone mapping and contrast enhancement*', Future ISP technology workshop, Nice, France;

44. 2019, June 19th. Seminar: '*Perspectives géométriques et psycho-physiques pour une reformulation de la colorimétrie*', Le Teich, France;

43. 2019, May 23rd. Seminar: '*Après la thèse ? ... aspects entreprises et académiques*', IMB, Bordeaux, France;

42. 2019, April 17th: Seminar: '*Variational color image processing*', LIRMM, Montpellier, France;

41. 2019, April 15th: Seminar: '*A variational model to help restoration of lacunae in frescoes*', Italian Embassy in Paris, France;

40. 2018, November 22nd: Workshop on 'Cortical models for visual perception and imaging applications', '*Resnikoff's model of perceived colors space*', Paris, France;

39. 2018, November 12th: 2 hours lesson given within the Color Imaging Conference (CIC26), Vancouver, Canada '*Variational Color Image Enhancement inspired by Human Vision*';

38. 2018, Plenary speaker. July 2nd-4th: '*An overview on variational and statistical methods for color analysis of natural images*', The 20th International Symposium on Multispectral Colour Science MCS18;

37. 2018, May 9th: '*Mathematics of color image processing*', Seminars of the Università di matematica di Pisa, Italy;

36. 2018, January 15th: '*Retinex-like Models in Color Enhancement*', MIA (Mathematics Images Applications) Conference, Berlin, Germany;

35. 2017, September 14th: '*Le modèle de Philipona-O'Regan, les couleurs pures et les propriétés de la reflectance des surfaces*', University of Bordeaux, France;

34. 2017: '*From variational principles to Poisson EDPs: mathematical formalizations of the Retinex model*', invited speaker for the plenary speech at the 9th International Conference on Graphic and Image Processing (ICGIP), Qingdao, China, 13-15 October, 2017;

33. 2017, February 7th: INSA Toulouse, France '*Variational techniques in color image processing*';

32. 2016, November 8th: 2 hours lesson given within the Color Imaging Conference (CIC24), San Diego, USA '*Variational Color Image Enhancement inspired by Human Vision*';

31. 2016, May 19th: Université de Bordeaux, France. Topic: '*Second order stationarity and spatiochromatic properties of natural images*';

30. 2016, May 12th: ENS Cachan, France. Topic: '*Second order stationarity and spatiochromatic properties of natural images*';

29. 2015, October 19th: 2 hours lesson given within the Color Imaging Conference (CIC23), Darmstadt, Germany '*Variational Color Image Enhancement inspired by Human Vision*';

28. 2015 June 4th: Universitat de les Illes Balears, Palma de Mallorca, Spain. Topic: '*Second order stationarity and tensor product spatiochromatic features of natural images*'. Research collaboration from May 25th to June 14th, 2015;

27. 2014 May 12-14: SIAM Conference on Imaging Science (SIAM-IS14), Hong Kong, China. Invited speaker for the following Minisymposia: '*Color Perception and Image Enhancement*' and '*Mathematics for Imaging: the Legacy of Vicent Caselles*';

26. 2013 June 14th: Université de la Bourgogne, Dijon, France. Topic: '*A variational approach to color science*';

25. 2013 June 4th: Technicolor, Rennes, France. Topic: '*Spatial and local frequency framework for perceptually inspired variational enhancement of color images*';

24. 2013 May 28th: Université Paris Descartes, Paris, France. Topic: '*Spatial and local frequency framework for perceptually inspired variational enhancement of color images*';

23. 2013 May 15th: Télécom ParisTech, Paris, France. Topic: '*Spatial and local frequency framework for perceptually inspired variational enhancement of color images*';

22. 2012 July 12th: Politecnico di Torino, Torino, Italy. Topic: '*Variational techniques in color imaging*';

21. 2012, May 20th: Invited speaker for the plenary talk of the SIAM conference on Imaging Science, Philadelphia, USA. Awarded, together with Rodrigo Palma Amestoy, Marcelo Bertalmío and Vicent Caselles, with the prize for the most outstanding paper on mathematical and computational aspects of imaging, broadly interpreted for the homonymous paper published in IEEE Transactions on Pattern Analysis and Machine Intelligence, 31(3), 458-474, March 2009;

20. 2012 May 21th: Johns Hopkins University, Baltimore, USA. Topic: '*A perceptually inspired variational framework for color enhancement*';

19. 2011 December 7th: University of Technology of Sydney, Australia. Topic: '*Perceptually-inspired variational models for color corrections*';

18. 2011 August 9th: Summer School on Mathematical models in Image Processing and Computer Vision at UIMP, Santander, Spain. Topic: '*Contrast and dispersion in colour compensation models: a variational analysis*';

17. 2011 March 16th: Università di Bergamo (Italy). Topic: '*Variational techniques in color image processing*';

16. 2010 February 18th: Departamento de Óptica, Universidad de Granada, Spain. Topic: '*Generation and tone mapping of High Dynamic Range Images*', invited speaker for the Erasmus Mundus CIMET Master (Vibot);

15. 2009 June 4th: Departamento de Óptica, Universidad de Granada, Spain. Topic: '*Variational techniques for perceptual color correction: overview on state of the art*', invited speaker for the Erasmus Mundus CIMET Master (Vibot);

14. 2008 January 31th: Universitat Pompeu Fabra, Barcelona, Spain. Topic: '*High Dynamic Range Images: Debevec-Malik's method to recover radiance maps and introduction to the tone mapping problem*';

13. 2007 November 15th: Universitat Pompeu Fabra, Barcelona, Spain. Topic: '*Variational histogram equalization and its developments*';

12. 2007 July 26th: Universitat Pompeu Fabra, Barcelona, Spain. Topic: '*Axiomatic framework for variational perceptually-inspired color enhancement*';

11. 2006 September 27-28-29th: Universitat Pompeu Fabra, Barcelona, Spain. Series of lessons about: '*Retinex: a mathematical perspective*';

10. 2006 April, 19th: Università di Milano (Italy), DTI. Topic: '*Dynamic Retinex*';

9. 2006 January, 29th: Università degli studi di Milano Bicocca (Italy). Topic: '*Wavelets and computational models of color perception: motivations and perspectives*';

8. 2005 November, 25th: Università di Bergamo (Italy). Topic: '*Computational models of color perception*';

7. 2005 - 2006: Università di Milano (Italy), DTI. Series of lessons about: '*Fourier, Gabor and Wavelet transforms and their application to signal and image processing*';

6. 2005 June, 14th: Università di Milano (Italy), DTI. Topic: '*Histogram equalization via partial differential equations and variational principles*';

5. 2005 March, 1st: Università di Milano (Italy), DTI. Topic: '*Mathematical formulation of Retinex: structural analysis of the algorithm*';

4. 2003 November 26th: Università di Milano (Italy), DTI. Topic: 'Dissertation on the paper "*Differential geometry and color perception*", by H.L. Resnikoff, analysis and perpectives';

3. 2003, February, 21st: Università di Milano (Italy), Dipartimento di Matematica. Topic: '*Introduction to the theory of C*-algebras and their representations*';

2. 2002, October-December: University of Riverside, California, USA. Department of Mathematics. Series of seminars about Abstract Harmonic Analysis;

1. 2001, October, 29th: Università di Genova (Italy), Dipartimento di Matematica. Topic: '*Loop quantization of diffeomorphism-invariant gauge theories*'.

5.2 Invited visiting researcher/professor

5. University of Zagreb, Croatia, 25-27 September 2019. Invited visiting researcher in the image processing group

4. Università di Padova, Italy, 1-5 July 2019. Invited visiting professor for the 10 hours course 'Geometrization of colorimetry' in the framework of the Erasmus+ program

3. Universidad de Granada, Spain, 3-8 April 2017 and 14-18 April 2018. Invited visiting professor for the Erasmus Mundus Master VIBOT

2. Universidad de La Habana, Cuba, 9-20 January 2017. Invited visiting professor for the 25 hours Master course 'Fourier transform and Image Analysis' in the framework of the Scientific cooperation between France and Cuba in Applied Mathematics

1. Universitat des illes Balears, Palma de Mallorca, Spain, 18 May-5 June 2016. Invited visiting researcher in the group of Mathematical Processing.

6 Coordination of the research activity

6.1 PhD students

4. Gabriel Niebel, co-supervision of his PhD thesis, 2023-2026 (with Michel Berthier);

3. Luvin Ragoo, co-supervision of his PhD thesis 2020-2023 (with Ivar Farup and Graham Finlayson);

2. Nicoletta Prencipe, supervision of her PhD thesis 2019-2022, defended in November 28th, 2022;

1. Sira Ferradans, co-supervision of her PhD thesis from 2007-2010 (with Marcelo Bertalmío and Vicent Caselles);

6.2 Internships and Master students

14. Michele Aldé, M2 internship, September 1st 2022, February 28th, 2023;

13. Dehmane Chadi, Virginie Montalibet, M2 internship, February 1st-July 31st, 2021;

12. Mohammed Bidou, Antoine Guennec, Marine Redondo, Dylan Russon, M2 internship, Université de Bordeaux, February 1st-July 31st, 2020;

11. Karlo Koščević, University of Zagreb, Faculty of Electrical Engineering and Computing, PhD internship, Université de Bordeaux, February 9th - 17th, 2019;

10. Fiammetta Cirrone, 'tesi di laurea' at Università di Padova, December 2019;

9. Nicoletta Prencipe, 'tesi di laurea' at Università di Padova, July 2019;

8. Nikola Banić, University of Zagreb, Faculty of Electrical Engineering and Computing, Post-Doc internship, Université de Bordeaux, February 25th - March 1st;

7. Santiago Herrero and Tooba Shams, internship for the Erasmus Mundus Master IPCV, February-December 2019;

6. Yiye Jiang, M2 internship at Université de Bordeaux, February 1st - June 31st, 2018;

5. Vivek Dewan, L3 internship at Université Paris Descartes, June 1st - July 31st, 2017;

4. Juliet Chauvin, M2 internship at Université Paris Descartes, May 1st - August 31st, 2016;

3. Alban Flachot, M2 internship at Université Paris Descartes, February 1st - July 31st, 2016 (co-supervision 50-50 with J.K. O'Regan, LPP Paris Descartes);

2. Marco Rossetti, 'tesi di laurea' at Università di Milano, Department of Information Technology of Crema, Academic years 2006-2007 (co-supervision with A. Rizzi);

1. Massimo Fierro, 'tesi di laurea' at Università di Milano, Department of Information Technology of Crema, Academic years 2005-2006 (co-supervision with A. Rizzi and C. Gatta).

7 Academic administrative activity

7.1 Master coordination

- Responsible of the option 'Signal and image processing' of the Master at University of Bordeaux, September 2018-2022;

- Member of the student selection committee for Master Erasmus Mundus IPCV, 2017-2020;

- Member of the TICMA commission of the Universitat Pompeu Fabra from 2008 to 2010. The aim of the commission was to coordinate the Master activity for students in Computer Science and Telecommunications.

7.2 University counsel

- Member of the Counsel of formation for the university of Bordeaux: 1 September 2018 - 24 November 2022;

- Organization of Math-Employment day: 19 November 2021, University of Bordeaux.

7.3 Jury and selection committees

- Examiner and and jury member for the Habilitation à diriger des recherches (HDR) of Giuseppe Valenzise, CentraleSupelec - Université Paris-Sud, December 18th 2019;

- Rapporteur and jury member for the Habilitation à diriger des recherches (HDR) of Jean-Baptiste Thomas, Université de Dijon, August 31st 2018.

- Member of the jury for the PhD defense of:

    8. Nicoletta Prencipe, (28 November 2022, Université de Bordeaux, supervisor)
    7. Hermine Chatoux, (21 May 2019, Université de Poitiers, rapporteur)
    6. Qi-Chong Tian, (4 Octobre 2018, Université Paris Dauphine, rapporteur)
    5. Prakhar Amba (3 May 2018, Université Pierre Mendès Grenoble, rapporteur and president of the jury)
    4. Fabien Pierre (23 November 2016, Université de Bordeaux, examiner)
    3. Oriel Frigo (19 October 2016, Université Paris Descartes, examiner)
    2. Paul Lauga (3 December 2015, Télécom ParisTech, examiner)
    1. Baptiste Mazin (28 Mars 2014, Télécom ParisTech), examiner).

- Member of selection committees:

    4. 2018-2019-2020-2021-2022, Maître de conférences, Université de La Rochelle;
    3. 2018, Maître de conférences, Université de Bordeaux (vice-president);
    2. 2016, Maître de conférences, MAP5 Université Paris Descartes;
    1. 2016, Maître de conférences, LPP Université Paris Descartes.

- Mission officer (chargé de mission) for the industrial relationships and the valorization of the University of Bordeaux 2019-2022;

- Local correspondent at the Institute of Mathematics of Bordeaux for PhD students, 2019-Today.

8 Administrative activity for research

8.1 Invited editor for international scientific journals

- Invited editor for Journal of Imaging, special Issue 'Modelling of Human Visual System in Image Processing' (2022)

- Feature editor for the special issue 'Image Quality and Perception', Journal of the Optical Society of America A (2022)

- Invited editor for Journal of Imaging, special session on 'Mathematical Models of Visual Perception and Biology with Applications to Images Processing and Computer Vision' (2020-2021)

- Member of the Editorial Board of the Journal of Imaging (2019-nowadays)

- Invited editor for Journal of Imaging, special session on 'Color Image Processing', (2015-2017).

8.2 AMIES

2018-2022: facilitateur (local representer) of AMIES (Agence pour les Mathématiques en Interaction avec l'Entreprise et la Société - Labex, UMS 3458 CNRS, UGA). The scope of AMIES is to approach pure and applied mathematicians to the problems raised by a wide spectrum of enterprises.

8.3 GdR 'Group de Recherche' - Research Group - of CNRS

- Co-responsible of GDR-ISIS group 'Image and Vision', 2018-2022

  - Organization of the meeting 'Computational photography', June 4th 2020, in collaboration with GDR IG-RV, online;

  - Organization of the meeting 'Biological and artificial vision in image processing and learning', Université de Marseille, October 10th, 2019, in collaboration with GDR Vision.

  - Organization of the meeting 'Geometry and representation of color', Université Paris Jussieu, Paris, November 21st, 2018, in collaboration with the meeting 'Mathematical models of cortical vision'.

- Correspondent for GdR-ISIS for the university of Bordeaux

- Scientific committee member of GdR-MIA, in charge of inter-communication among GdR's.

8.4 Session chair for conferences

5. 2021 Geometric Science of Information, Session on 'Geometry of Quantum States', Paris, July 22nd;

4. 2018 The 20th International Symposium on Multispectral Colour Science MCS18;

3. 2016 Color and Imaging Conference, San Diego, USA, November 7-11;

2. 2016 Electronic Imaging Conference, San Francisco, USA, February 14-18;

1. 2012 VISAPP conference, February 24–26, Rome, Italy.

8.5 Referee for international scientific journals

18. Computer vision and image understanding;

17. IEEE Signal Processing Letters;

16. IEEE Transaction on Image Processing;

15. Image Communication;

14. International Journal of Signal and Imaging Systems Engineering;

13. IPOL - Image Processing OnLine;

12. Journal of Electronic Imaging;

11. Journal of Mathematical Imaging and Vision;

10. Journal of Mathematical Neuroscience;

9. Journal of Mathematical Psychology;

8. Journal of the Optical Society of America A;

7. Journal of Vision;

6. Journal of real-time imaging;

5. Mathematical Neuroscience and Applications;

4. Machine Vision and Applications;

3. Optical Engineering;

2. Signal Image and Video Processing;

1. SIAM Journal on Imaging Sciences (SIIMS).

8.6   Conference organization and management

Member of the technical and/or program and/or steering committee of the followings conferences/workshops:

14. 2023 Workshop on Appearance and Imaging within the 17th international conference IEEE SITIS 2023, Bangkok, Thailand, 8-10 November;

13. 2023, GSI 'Geometric Science of Information', Saint-Malo, France, 30 August - 1 September;

12. 2022, Signal Image Technology and Internet Based Systems, Dijon, France, October 19-21;

11. 2021 ISPA, 12th International Symposium on Image and Signal Processing and Analysis, Zagreb, Croatia, September 13-15;

10. 2021 The 4th International Conference on Image and Graphics Processing - ICIGP. January 1-3, Sanya, China;

9. 2020, SEME 'Semaine d'Etude Mathématiques - Entreprises', University of Bordeaux, France. 26-30 October. Full responsability of the organization;

8. 2020 SIAM Imaging Science, Minisymposium on Geometric methods for vision and image processing: from cortical to perceptual properties, Toronto, Canada July 6-9;

7. 2019 ISPA, 11th International Symposium on Image and Signal Processing and Analysis, Dubrovnik, Croatia, September 23-25;

6. 2018 SIAM conference, Minisymposium on the geometry of color processing, Bologna, Italy, June 5-8;

5. 2017 ISPA, 10th International Symposium on Image and Signal Processing and Analysis, Ljubljana, Slovenia, September 18-20;

4. 2017 ICGIP, International Conference on Graphic and Image Processing, Qingdao (China), October 13-15;

3. 2015 IEEE International Ph.D. Workshop on Multimedia Computing Research (MCR 2015), Miami, Florida, USA, December 14-16;

2. 2014 Signal Image Technology and Internet Based Systems, Marrakech, Morocco, November 23-27;

1. 2013 Signal Image Technology and Internet Based Systems, Kyoto, Japan, December 2-5.