



Alain Bretto

Full Professor, (Exceptional Class)

Education

- 2000-2001 **Habilitation Thesis to Direct Research in Computer Science**, *Jean Monnet University, Saint-Etienne*,
President : Maurice Nivat, member of the French Academy of Sciences,
https://fr.wikipedia.org/wiki/Maurice_Nivat
- 1992-1995 **PhD in Mathematics**, *Université Jean Monnet Saint-Etienne-Paris 6*,
Supervisors : Bernard Laget and Claude Berge,
https://fr.wikipedia.org/wiki/Claude_Berge
- 1991-1992 **DEA Algebra and Geometries, (Master2)**, Paris 6 ,
with Honors ; Supervisor : Claude Berge

Professional experiences

- 2002-now **Full Professor, (Exceptional Class, 2014)**, Université de Caen, Computational and Mathematical Department, GREYC-CNRS UMR 6072
- Ja-Se2014 **Visiting Researcher**, Institut Camille Jordan UMR-CNRS, (France)
- 2010-2011 **Visiting Researcher**, Telecom-ParisTech, (France)
- Dec2008-
Sept2009 **Visiting Professor**, *Northern Kentucky University (NKU) ; Department of Computer Science, College of Informatics ;*
- Dec2004-
Sept2005 **Visiting Professor**, University of California Irvine (UCI) ; Department of Computational Neuroscience, Institute for Mathematical Behavioral Sciences
- 1998-2002 **Associated Professor**, Université Jean Monnet, Saint-Etienne, Computational and Mathematical Department
- 1995-1998 **Researcher**, Institut d'Ingénierie de la Vision, Saint-Etienne
- 1993-1995 **Assistant Professor**, Université Jean Monnet, Saint-Etienne, Computational and Mathematical Department

Scientific Activities

Graphs and Hypergraphs Theory : Algebraic and Topological Aspects of Graph Theory, Geometrical Aspect of hypergraph Theory : Applications to Computer Vision and Image Processing, Artificial Intelligence, Finance, ecology.

Teaching Activities

Teaching activities in France

- 2024- Artificial Intelligence, Master of Science (Marketing).
- 2019- Data analysis, Master of Science (Marketing).
- 2016- Linear Algebra, Master of Science (Computer Science).
- 2016- Graph theory, Master of Science (Computer Science).
- 2011-2016 Logic and Computer Science.
- 2007-2011 Computer security : Master of Science (Computer Science).
- 2007-2011 Algorithmic : Undergrade in Computer Science.
- 2004-2007 Compilation and compilers : Master of Science (Computer Science).
- 2002-2008 Hypergraph Theory : Master of Science (Computer Science).
- 2002-2007 Data Codage and Data Compression : Master of Science (Computer Science).
- 2002-2004 Introduction to C++ : Undergrade in Computer Science.
- 2000-2002 Mathematics for Computer Science : Grade in Computer Science.
- 1998-2002 Complexity Theory : Master of Science (Computer Science).
- 1998-2002 Algorithms of the Graph Theory : Grade in Computer Science.
- 1997-2001 Graph Theory : Grade in Mathematics.
- 1994-1998 Operational Research : Master of Science (Computer Vision).
- 1994-1998 General Computer Science : Grade in Computer Vision.
- 1994-1998 Mathematics for Signal Processing : Conservatoire National des Arts et Métiers, Centre de Saint-Etienne.
- 1994-1997 Operational Research and Optimization : Ecole Nationale Supérieure des Mines Saint-Etienne.

Teaching activities abroad

- 1999 -2008 University of Messina, (Sicily) Master2 mathematics , two students in Master 2 supervised, and one PhD student supervised ;
- 2009-2010 Northern Kentucky Unuiversity, (USA) : Master2 computers sciences (30 hours), Graph theory and algorithms ;
- 2016- Université du Liban à Beyrouth (Lebanon) Master2 mathematics, Algebraic graph theory, two PhD students supervised

Participation to Committee for Academic Promotion (As referee)

- Dr. Sami M.A. Halawani. Promotion to the rank of Full Professor. KING ABDULAZIZ UNIVERSITY. May 2012.
- Dr. Abdulfattah S. Mashat. Promotion to the rank of Full Professor. KING ABDULAZIZ UNIVERSITY April 2013.

Supervision of students

Current Ph.D. Students

- Neda Moradi, G-graphs of GyroGroups **Collaboration with Professor Gholam Hossain Fath-Tabar** ; University of Kashan, Kashan, Iran.

Defense planned for 2026.

Past Ph.D. Students

- David Soares ENS Cachan, Ph.D. Computer Science, University of Caen, Computational aspect aspects of the supervision of equity markets. Completion : November 2020.
- Rafic Nader. Ph.D. Computer Science, University of Caen, France and Ph.D. Mathematics, Libanon University, Libanon. Similarities and distance algebraic aspects. **Collaboration with Professor Bassam Mourad** ; University of Libanon, Beirut, Libanon. Completion : April 2019 ;
- Mohamad Badaoui. Ph.D. Computer Science, University of Caen, France and Ph.D. Mathematics, Libanon University, Libanon. G-graphs and Ramanujan Graphs. **Collaboration with Professor Bassam Mourad** ; University of Libanon, Beirut, Libanon Completion : April 2018 ;
- Farzaneh Gholaminezhad, G-graphs and Cayley graphs ; collaboration with Iran, Kashan, kashan University. **Collaboration with Professor Ali Resa Ashravi** ; University of Kashan, Kashan, Iran.Completion December 2017.
- A. Ducournau.Ph.D. Computer Science, University of Saint-Etienne, France. Hypergraphs : clustering, reduction and random walk for images segmentation. Completion : September 2012 ;
- C. Hebert. Ph.D. Computer Science, University of Caen, France. Combinatorial Data Mining : Combinatorial Aspect. Completion : September 2007 ;
- L. Gillibert. Ph.D. Computer Science, University of Caen, France. Geometrical Aspect of groups and Images : G-graphs and Compression by Hypergraphs. Completion : December 2006 ;
- S. Rital. Ph.D. Computer and Signal Processing University Mohammed V Rabat, Marocco, **Collaboration with Professor D. Aboutajdine and Professor H. Cherifi** . Hypergraph Theory and Image Processing. Completion : July 2004 ;
- F. Rania. Ph.D. Applied Mathematics and Computer Science, University of Messina (Italy) ; **Collaboration with Professor E. M. Li Marzi and Professor J. F. Lofaro**. Topology and convex geometry, application to Image Processing. Completion : January 2003 ;
- S. Chastel. Ph.D. Computer Vision, University of Saint-Étienne. Contribution to the Hypergraph Theory to the Digital Image Processing, Completion : November 2001 ;

Research Grants.

- 2010-2011 CNES PROJECT “Hypergraphs and Satellite Image Analysis’.”
- 2003-2006 STEPHANIK PROJECT,France-Slovaquia Grant. “ Graphs and Density Theory : Applications to telecommunications”.
- 1999-2002 TEMPRA PROJECT, France-Slovakia Grant. “Computational Number Theory, Combinatorics : Applications to Cryptography”.
- 1997-1999 ACTIV PROJECT, Rhône-Alpes Area Grant. “Probability and Combinatoric : Applications to Image Processing.”

Conference Program Committees invitation and Key Note Speaker.

- 2024 Key Note Speaker.
International Conference on Computer Engineering and Artificial Intelligence (I2CEAI 2024)
27-28 Sep 2024 - Khouribga, Morocco.
<https://maaidt.org/>
- 2024 Member, Program Committee and Key Note Speaker.
5th International Conference on Computer Science, Artificial Intelligence and Application (CSAIA'24);
June 10-11, 2024 — Marrakech, Morocco.
<https://iccsaia.com/speakers/>
- 2023 Key Note Speaker.
Casa de Velazquez ; Madrid ; Espagne, Hypergraph theory Short introduction
and some applications, 18 Juillet 2023 ;
<https://www.casadevelazquez.org/en/news/hypergraph-theory>
- 2023 Member, Program Committee and Key Note Speaker.
4th International Conference on Computational Algebra, Computational Number Theory
and Applications (Memorial of Professor Alireza Ashrafi), July 4 - 6, 2023 ;
<https://cacna2023.kashanu.ac.ir/en/index.php>
- 2023 Member, Program Committee and Key Note Speaker.
Virtual International Conference on Computer and Communication Technology" (VICCCT'23),
23-26 January 2023 , Vidya Academy of Science and Technology Technical Campus Kilimanoor ; India
- 2021 Key Note Speaker
51 Annual of Iranian Mathematics Conference AIMC 51 in Kashan, Iran ; February 2021.
<https://faculty.kashanu.ac.ir/saeidian/en/page/15926/abstracts-booklet-of-51st-annual-iranian-mathematics-conference>
- 2019 Member, Program Committee .
6 th International Conference on Big Data and Cloud Computing, (ICBCC 2019) ;
9-10 September, 2019 ;
Ewing Marion Kauffman Foundation Conference Center
Kansas City, Missouri — USA
- 2018 Key Note Speaker.
Third Conference on Computational Algebra,
Computational Number Theory and Applications (CACNA2018),
December 2018
University of Kashan, Iran.
<https://cacna2018.kashanu.ac.ir/en/page/3687/keynote-speakers>
- 2018 Member, Program Committee .
10th International Joint Conference on Knowledge Discovery,
Knowledge Engineering and Knowledge Management (KEOD 2018),
18-20 September 2018
Seville, Spain.
<http://www.keod.ic3k.org/ProgramCommittee.aspx?y=2018>
- 2018 Key Note Speaker.
Colloque Philosophie/Sciences et techniques : "Quand la forme devient substance :
puissance des gestes, intuition diagrammatique et phénoménologie de l'espace."
25-27 Janvier 2018 ;
Lycée Henri IV, 23 rue Clovis, 75005 Paris.
https://rnx9686.webmo.fr/wp-content/uploads/2018/01/Flyer_essai_Diagramme-reduced.pdf

- 2018 Member, Program Committee .
International Conference on Innovative Smart Computing and Management
26th -27th May 2018
New Delhi, India.
[http : //www.ismartcom.org/home.php](http://www.ismartcom.org/home.php)
[http ://cennser.org/ICIEV/](http://cennser.org/ICIEV/)
- 2017 Key Note Speaker.
9th Iranian Group Theory Conference (IGTC 2017),
1-3 February, 2017.
University of Kashan, Iran.
[http : //grouptheory.ir/9igt/index.php?slclang = en&sid = 1](http://grouptheory.ir/9igt/index.php?slclang=en&sid=1)
- 2016 Member, Program Committee .
5th International Conference on Informatics, Electronics & Vision (ICIEV)
13-14 May, 2016, Dhaka, Bangladesh ! 5th ICIEV
- 2015 Main Speaker.
LICMA '15 Lebanese International Conference on Mathematics and Applications
Lebanese University - Faculty of Science
from 26 to 29 May 2015 Beirut, Lebanon
[http ://www.licma.net/index.php?p=1](http://www.licma.net/index.php?p=1)
- 2015 Member, Program Committee and Key Note Speaker.
International Conference on Cognitive Computing
and Information Processing CCIP - 2015 (3 - 4 March 2015)
JSS Academy of Technical Education, Noida, India.
[http ://www.ccip.jssaten.ac.in/](http://www.ccip.jssaten.ac.in/)
- 2014 Key Note Speaker.
Conference on Computational Algebra, Computational
Number Theory and Applications, (CACNA 2014) 17th-19th December ;
University of Kashan, Iran.
[http ://cacna2014.kashanu.ac.ir/](http://cacna2014.kashanu.ac.ir/)
- 2014 Key Note Speaker.
Second International Conference on Emerging Trends in
Electronics and Communication (ICETEC 2014),
Maria College of Engineering & Technology,
Attoor.Thiruvattar P.O. Kanayakumari District. Pin : 629177 India.
- 2013 Member, Program Committee and Key Note Speaker.
9th International Conference on Heterogeneous Networking for Quality,
Reliability, Security and Robustness, January 11-12, 2013 Greater Noida, India.
[http ://qshine.org/2013/show/home](http://qshine.org/2013/show/home).
- 2013 Member, Program Committee and Key Note Speaker.
International Conference on Mobile Communication and Embedded System Technology,
(MECON-2013), to be held on 17th-18th January 2013 at Amity School of Engineering
and Technology (ASET), Amity University Campus, Sec-125 India.
[http ://www.mecon2013.com/](http://www.mecon2013.com/)

- 2012 Member, Program Committee and Key Note Speaker.
International Conference on Emerging Technology Trends On Advanced Engineering Research, ICETT-2012, 15th-18th of February, 2012, Kollam, Kerala, India, <http://www.icett.com/users/keynote>.
- 2011 Member, Program Committee and Key Note Speaker,
ICAEEE-2011 : International Conference on Advances in Electrical Electronics Engineering (ICAEEE-2011),
(February 25-26, 2011) MIT Moradabad, India,
<http://aspspider.ws/icaeee2011/>
- 2010 Member, Program Committee,
ITNG 2010 : International Conference on Information Technology, New Generation.
April 12-14,, 2010, Las Vegas, Nevada, USA
- 2009 Member, Program Committee,
2009 World Congress on Computer Science and Information Engineering (CSIE 2009).
March 31 - April 2, 2009 Los Angeles/Anaheim, USA.
- 2008 Member, Program Committee,
ITNG 2008 : International Conference on Information Technology, New Generation.
April 7-9, 2008, Las Vegas, Nevada, USA
- 2007 Member, Program Committee,
FCS'07- The 2007 International Conference on Foundations of Computer Science Monte Carlo Resort, Las Vegas, Nevada, USA (June 25-28, 2007)
<http://www.world-academy-of-science.org/worldcomp07/ws/FCS07/>
- 2007 Member, Program Committee,
International Conference on Advances in Computer Vision and Information Technology (28-30 November 2007) Aurangabad India <http://www.acvit.org/>
Nara Women's University, Nara, Japon.
- 2005 Member, Program Committee,
VISAPP 2006 : International Conference on Computer Vision Theory and Applications, (<http://www.visapp.org/>).
- 2005 Organization of the special session :
Computational algebraic structures and engineering applications,
11th International on Applications of Computer Algebra, July 31-August 3, 2005,
- 2002 Member, Program Committee,
Workshop in Theoretical Computer Science, May 20-23, Saint-Etienne, France.
- 2001 Member, Scientific Committee and Key Note Speaker,
6th International Mediterranean Workshop in Combinatorics and Computer Sciences, April 10-13, Messina Italy.
- 2000 Member, Scientific Committee,
International Conference ISCIV, 17-20 April Rabat Marocco.
- 1999 Member, Program Committee,
5th International Mediterranean Workshop in Combinatorics and Computer Sciences, November 07-10, Messina Italy.

Visiting Professor, (short stay)

- University College of Cork, (Ireland), GEOL,
(http://www.ceol.ucc.ie/index_files/collaborations.htm), (May 2005).
- Slovak Academy of Sciences, (April 2004).
- University Mohammed V (Maroc) : Laboratory of Computer Science and Signal Processing (September 1999, March 2000, February 2001).
- University of Ljubljana (Slovenia) : Institut of Mathematic, Physic and Mecanic. Theoretical Computer Science Group. (December 1998, December 1999, December 2000.)
- Trinity College (Ireland) : Computer Science Department (November 1997).

Invited Talk

- Institute of Mathematics, The Department of Applied Mathematics at Université P. Sabatier, (France). “Combinatorial topology.” (February 2008).
- Illinois Institute of Technology, The Department of Applied Mathematics at IIT, (U.S.A.). “Combinatorial aspects of image processing.” (February 2006).
http://www.math.iit.edu/past_events/spring06/sem_coll – Spring2006.html
- Comenius University, (Slovakia). “A New Graphical Representation of a Group.” (April 2004).
- Academia Peloritana dei Pericolanti, (Sicily) : Classe di scienze fisiche matematiche e naturali
“ A Mathematical Morphological Approach of Combinatorial Geometry”. (November 1999).

National and international responsibilities

- 2015–2023 : Member of the CONSEIL NATIONAL DE L’ENSEIGNEMENT SUPERIEUR ET DE LA RECHERCHE,
(National Council which defines the policy of research and university education in France).
- 2015–2023 : Judge at the Disciplinary Jurisdiction of the NATIONAL COUNCIL FOR HIGHER
EDUCATION AND RESEARCH.
- 2008-2011 Head of the Algorithmic Team (Laboratory :GREYC CNRS UMR 6072,
(around 25 staff)-Université de Caen
- 2003-2008 Head of the Mathematics and Computer Science Department, Université de Caen,
Computational and Mathematical Department GREYC-CNRS UMR 6072,
Bd Maréchal Juin F 14032 Caen Cedex

Distinctions

- 2024-now : Member (elected in September) of the European Interdisciplinary Academy of Sciences
(Académie Européenne Interdisciplinaire des Sciences).
<http://science-inter.com/>
- 2016-now : Member (elected in October) of the ACCADEMIA PELORITANA DEI PERICOLANTI
(Academy of Sciences Sicilly).<http://www.accademiapeloritana.it/>
- 2020-now : Member (elected December) of the ACADEMIE DES SCIENCES
ET BELLES LETTRES DE CAEN ; <https://www.academie-scabl-caen.com/>
- 2011 : Moradabad Institut of Technologie-India :
Prize for all of my work in Information Science ;
(<https://bretto.users.greyc.fr/photographies.html>)

Society Review and Editorial Activities.

PROFICIENT

2000-2009 EUROPEAN MATHEMATICAL SOCIETY.

2007-2009 AMERICAN MATHEMATICAL SOCIETY.

EDITOR ACTIVITIES

2016-Editor MATHEMATICS INTERDISCIPLINARY RESEARCH (MIR)
(new journal), <http://mir.kashanu.ac.ir/>

2009-Associate editor :INFORMATION SCIENCES JOURNAL
Publisher : Elsevier ; Impact Factor : 2,83

2011-Editor JOURNAL OF DISCRETE MATHEMATICS AND ITS APPLICATIONS
<https://jdma.sru.ac.ir/>

Expertise Activities

2023 : Member of the World University Rankings Committee of : Quacquarelli Symonds- QS.

2023 : Member of the World University Rankings Committee of : Times Higher Education- THE.

2009 ; 2015 :Expert to the National Science Foundation, (USA).

2021- : Expert to the european research council, (Europe).

2008 ; 2011 :Expert to the French Ministry of Higher Education and Research, (International Folders).

Non-governmental organization

2017- Member of the board of directors of : International Association of Professors and Lecturers of Universities, I.A.U.P.L. NGO recognized by UNESCO ;
founded by Rene CASSIN, Nobel Peace Prize winner.

Publications

Books

- [1] A. Bretto. *Intelligence artificielle : la réalité & le mythe : Ébauche d'une théorie générale de l'intelligence artificielle*. Desiris, March 2021.
- [2] A. Bretto. *Artificial Intelligence General Theory : a Philosophical Approach*. History, Philosophy of Science, Business Ethics. Springer, à paraître Décembre 2024.
- [3] A. Bretto. *Hypergraph theory : an introduction*. Mathematical Engineering, International Collection. Springer Verlag, May 2013.
- [4] A. Bretto, A. Faisant, and F. Hennercart. *Éléments de théorie des graphes*. IRIS International Collection. Springer Verlag, 2012.
- [5] A. Bretto, A. Faisant, and F. Hennercart. *Éléments de théorie des graphes, Seconde édition, revue et augmentée*. IRIS International Collection. Editions Lavoisier, 2018.
- [6] A. Bretto, A. Faisant, and F. Hennercart. *Element of graph theory :From Basic Concepts to Modern Developments*. EMS Textbooks in Mathematics, (ETD). European Mathematical Society, Décembre 2022.

Chapters of Book

- [7] A. Bretto. *Introduction to Hypergraph Theory and their Use in Engeneering and Image Processing*. Advances in Imaging and Electron Physics (Monographic Serie). Elsevier Academic Press, March 2004.
- [8] A. Bretto. *Applied Graph Theory in Computer Vision and Pattern Recognition.*, volume 51 of *Studies in Computational Intelligence*, chapter Digital Topologies on Graphs. Springer-Verlag, February 2007. ISBN-10 : 3-540-68019-5, ISBN-13 : 978-3-540-68019-2.
- [9] C. Tanasescu, R. Marinescu-Ghemeci, and A. Bretto. *Optimization Theory, Decision Making, and Operations Research Applications*, chapter Incidence Graphs of Bipartite G-Graphs, pages 141–151. Mathematincs Proceedings in Mathematics & Statistics. Springer-Verlag, November 2012. ISBN-978-1-4614-5133-4, ISBN-978-1-4614-5134-1 (eBook).

International journals with editorial board

- [10] Alain Bretto, Alain Faisant, and Francois Hennecart. The berge-füredi conjecture on the chromatic index of hypergraphs with large hyperedges. *Ars Mathematica Contemporanea*, soumis : 2024.
- [11] Alain Bretto, Alain Faisant, and Francois Hennecart. About berge-füredi's conjecture on the chromatic index of hypergraphs. *Compte Rendu Mathématique-Académie des Sciences (Paris)*, soumis : 2024.
- [12] Isabelle Bloch and Alain Bretto. Functional analysis on hypergraphs : density and zeta functions—applications to molecular graphs and image analysis. *Information Sciences*, 676 :120850, 2024.
- [13] Alain Bretto Ali Reza Ashrafi and Alain Faisant. Linear representation of graphs : applications to molecular graphs. *MATCH : Communications in Mathematical and in Computer Chemistry*, 90(1) :5–18, 2023.
- [14] Rafic Nader, Bassam Mourad, Hassane Abbas, and Alain Bretto. On the positive semi-definite pth roots of positive semi-definite doubly stochastic matrices. *Linear and Multilinear Algebra*, 70 :1–21, 09 2020.
- [15] Alain Bretto, Alain Faisant, and Francois Hennecart. On hyperedge coloring of weakly triangulated hypergraphs and well ordered hypergraphs. *Discrete Mathematics*, 343(11) :112059, 2020.
- [16] Rafic Nader, Alain Bretto, Bassam Mourad, and Hassan Abbas. On the positive semi-definite property of similarity matrices. *Theoretical Computer Science*, 755 :13–28, 2019.
- [17] Rafic Nader, Bassam Mourad, Alain Bretto, and Hassan Abbas. A note on the real inverse spectral problem for doubly stochastic matrices. *Linear Algebra and its Applications*, 569 :206–240, 2019.
- [18] M. Badaoui, A. Bretto, and B. Morrad. On a relationship between cayley graphs and g-graphs and some applications. *Linear Algebra and its Applications*, 582 :37–57, 2019.
- [19] M. Badaoui, A. Bretto, D. Ellison, and B. Morrad. On constructing expander families of g-graphs. *Ars Mathematica Contemporanea*, 15 :425–440, 2018.
- [20] A. Ashrafi, A. Bretto, and F. Gholaminezhad. The automorphism groups of the involution g-graph and cayley graph. *Southeast Asian Bulletin of Mathematics*, 35 :1–19, 2018.
- [21] A. Bretto, A. Faisant, and F. Hennecart. On hyperedge coloring for weakly triangulated hypergraphs and well ordered hypergraphs. *Discrete Mathematics*, Soumis en 2019.

- [22] I. Bloch, A. Bretto, and A. Loborgne. Robust similarity between hypergraphs based on valuations and mathematical morphology operators. *Discrete Applied Mathematics*, 183 :2–19, 2015.
- [23] I. Bloch and A. Bretto. Corrigendum to “mathematical morphology on hypergraphs, application to similarity and positive kernel”. *Computer Vision and Image Understanding*, 132 :1–2, 2015.
- [24] Aurélien Ducournau and Alain Bretto. Random walks in directed hypergraphs and application to semi-supervised image segmentation. *Computer Vision and Image Understanding, (CVIU)*, 120 :91–102, 2014.
- [25] A. Bretto, Y. Silvestre, and T. Vallée. Factorization of cartesian product of hypergraphs : structure and algorithms. *Theoretical Computer Science*, 475 :47–58, 2013.
- [26] I. Bloch and A. Bretto. Mathematical morphology on hypergraphs, applications to similarity and positive kernel. *Computer Vision and Image Understanding*, 117 :342–354, 2013.
- [27] Aurélien Ducournau, Alain Bretto, Soufiane Rital, and Bernard Laget. A reductive approach to hypergraph clustering : An application to image segmentation. *Pattern Recognition*, 45(7) :2788–2803, 2012.
- [28] A. Bretto and A. Faisant. Cayley graphs and g-graphs : some applications. *Journal of Symbolic Computation*, 46(12) :1403–1412, December 2011.
- [29] A. Bretto, A. Faisant, and L. Gillibert. New graphs related to (p,6) and (p,8)-cages. *Computers and Mathematics with Applications*, 62(6) :2472–2479, September 2011.
- [30] T. Vallée and A. Bretto. A new closure concept preserving graph hamiltonicity and based on neighborhood equivalence. *Discrete Mathematics*, 311 :336–341, 2011.
- [31] A. Bretto and T. Vallée. A new clique-covering sufficient condition for hamiltonicity of graphs. *Information Processing Letters*, 109(20) :1156–1160, 2009.
- [32] A. Bretto and L. Gillibert. Hypergraphs for multi-dimensional lossless image compression. *Fundamenta Informaticae*, 91(3-4) :533–546, 2009.
- [33] A. Bretto and L. Gillibert. G-graphs : an efficient tool for constructing symmetric and semi-symmetric graphs. *Discrete Applied Mathematics*, 156(14) :2719–2739, 2008.
- [34] Céline Hébert, Alain Bretto, and Bruno Crémilleux. A data mining formalization to improve hypergraph minimal transversal computation. *Fundamenta Informaticae*, 80(4) :415–433, 2007.
- [35] Alain Bretto, Alain Faisant, and Luc Gillibert. G-graphs : A new representation of groups. *Journal of Symbolic Computation.*, 42(5) :549–560, 2007.
- [36] Alain Bretto. Hypergraphs and the helly property. *Ars Combinatoria.*, 78, 2006.
- [37] Alain Bretto, Alain Faisant, and Thierry Vallée. Compatible topologies on graphs : An application to graph isomorphism problem complexity. *Theoretical Computer Science.*, 362(1-3) :255–272, 2006.
- [38] A. Bretto, S. Ubéda, and J. Žerovnik. A polynomial algorithm for the strong helly property. *Information Processing Letters*, 81(1) :55–57, January 2002.
- [39] A. Bretto, H. Cherifi, and D. Aboutajdine. Hypergraph imaging : an overview. *Pattern Recognition*, 35(3) :651–658, 2002.

- [40] A. Bretto and E. M. Li Marzi. Mathematical morphology and poset geometry. *International Journal of Mathematics and Mathematical Sciences*, 28(8) :447–453, 2001.
- [41] A. Bretto. Comparability graphs and digital topology. *Computer Vision, Graphic and Image Processing (Image Understanding)*, 82 :33–41, 2001.
- [42] A. Bretto, J. Azema, H. Cherifi, and B. Laget. Combinatoric and image processing. *Computer Vision, Graphic and Image Processing (Graphical Model and Image Processing)*, 59(5) :128–132, September 1997.

National journals with editorial board

- [43] P. Y. Bischoff and A. Bretto. 3-dimensional zerotree for wavelet image compression. *Int. J. Comput. Numer. Anal. Appl*, 2(4) :401–412, 2002.
- [44] A. Bretto, E. M. Li Marzi, and F. Rania. Some latticial and convex aspects of mathematical morphology. *Rendiconti del Circolo Matematico di Palermo*, 70(Ser.II)(1) :121–134, 2002.
- [45] A. Bretto and A. Faisant. Topologies on bipartite graphs. *Rendiconti del Seminario Matematico di Messina.*, 8(Ser.II) :11–18, 2002.
- [46] S. Rital, A. Bretto, D. Aboutajdine, and H. Cherifi. A combinatorial based technique for impulsive noise removing in images. *Intenational Journal of Image Processing and Communication*, 7(3-4) :115–129, 2001.
- [47] A. Bretto and B. Laget. Helly type theorems and graphs. *Rendiconti del Circolo Matematico di Palermo*, 65(Ser. II) :59–65, 2000.
- [48] A. Bretto and B. Laget. Helly property associated with the discrete planes. *Southwest journal of pure and applied mathematics*, 1 :56–63, 1998.
- [49] A. Bretto. Modélisation d'image par hypergraphe de polyominos valués. *Rendiconti del Seminario Matematico di Messina.*, II(7 :1) :1–6, 2002.
- [50] A. Bretto. Some geometrical and topological aspects of graph theory. *Rendiconti del Seminario Matematico di Messina*, II(5) :15–29, 1999.
- [51] A. Bretto. A note on intersecting graphs. *Southwest journal of pure and applied mathematics*, 2 :61–67, 1999.

International conferences with editorial committee

- [52] I. Bloch and A. Bretto. A new entropy for hypergraphs. In *Discrete Geometry for Computer Imagery - 21th IAPR International Conference, DGCI 2019*, à paraître dans Lecture Notes in Computer Science, ESIEE Paris, France, March 26th-28th 2019.
- [53] Isabelle Bloch, Alain Bretto, and Aurélie Leborgne. Similarity between hypergraphs based on mathematical morphology. In Springer, editor, *ISMM*, Lecture Notes in Computer Science, pages 1–12, 2013.
- [54] A. Bretto and J. Priolon. A new approach to asset pricing with rational agents behaving strategically. In *CIFEr, Computational Intelligence for Financial Engineering and Economics*, IEEE Computational Intelligence Society, pages 168–174, March 29-30 2012.
- [55] I. Bloch and A. Bretto. Mathematical morphology on hypergraphs : Preliminary definitions and results. In Springer, editor, *Discrete Geometry for Computer Imagery - 16th IAPR International Conference, DGCI 2011*, volume 6607, pages 429–440, Nancy France, April 6-8 2011.

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