Curriculum Vitae

Marcello Pelillo

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Affiliation

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Personal

Born on June 1, 1966 in Taranto, Italy. Italian citizen. Married with two children. Enjoy reading philosophy, history, and literature. Enjoy classical music and play the piano.

Research interests

My research interests are in the areas of pattern recognition, computer vision, and machine learning. At present, I'm particularly interested in similarity-based pattern recognition methods, in graph-theoretic models (with an emphasis on continuous-based approaches), and in the interplay between game theory, pattern recognition and machine learning. A few problems I'm currently working on are: data clustering, semi-supervised learning, structural matching, contextual pattern recognition and labeling problems, image/video segmentation, perceptual grouping, shape representation and recognition. I'm also interested in the philosophical aspects of pattern recognition and machine learning.

Since its foundation in 1995 I lead the Computer Vision and Pattern Recognition Group at the University of Venice. The group is a member of *PASCAL 2*, the European Network of Excellence on Pattern Analysis, Statistical Modeling, and Computational Learning.

Education

March 1989

Laurea (summa cum laude) in Computer Science, University of Bari, Italy

Employment

June 2011 –

Full Professor of Computer Science, DAIS, University of Venice, Italy

May 2010

Italian academic habilitation ("idoneità") as *Full Professor of Computer Science*

November 2000 – May 2011

Associate Professor, Dipartimento di Informatica, University of Venice, Italy

1995–2000

Assistant Professor, Dipartimento di Informatica, University of Venice, Italy

1991–1995

Assistant Professor, Dipartimento di Informatica, University of Bari, Italy

Visiting appointments

- Yale University, Department of Computer Science, New Haven, CT, USA (1997, 1998)

- McGill University, School of Computer Science, Montréal, Canada (1995, 2008)

- National ICT Australia (NICTA), and Australian National University, Computer Sciences Laboratory, Canberra, Australia (2009, 2011)

- University of York, Department of Computer Science, York, UK (1995, 1996)

- Universität Wien, Institut für Statistik und Decision Support Systems, Vienna, Austria (1997, 1999, 2002, 2003, 2008)

- University College London, Gatsby Computational Neuroscience Unit, London, UK (2000)

- IBM Research Center, Rome, Italy (1988–1989)

Awards and recognition

- Ca' Foscari University Advanced Research Award, 2013

- Fellow, IEEE (the Institute of Electrical and Electronic Engineers), 2013

- Fellow, IAPR (the International Association for Pattern Recognition), 2008

- Senior Member, IEEE (the Institute of Electrical and Electronic Engineers), 2004

- Best Student Paper Award (with M. Pavan), 12th Int'l Conference on Image Analysis and Processing (ICIAP), 2003

- European Union Award to European Young Researchers to attend IJCNN, 2000

- Research Award, Italian National Research Council (CNR), 1998

- NATO-CNR (Italian National Research Council) Fellow, 1997

- Italian National Research Council (CNR) Fellow, 1996–1997

- IBM Rome Scientific Center Fellow, 1988–1989

- IBM Undergraduate Fellow, 1998

Major University services

2013–present
> *Director*, Center for Knowledge, Interaction, and Intelligent Systems (KIIS), University of Venice, Italy

2010
> *Delegate of the Dean for Teaching Activities*, Faculty of Science, University of Venice, Italy

2004–2010
> *Chair*, Board of Study of the Computer Science School, University of Venice, Italy

2004–2010
> *Member*, Executive Committee of the Faculty of Science, University of Venice, Italy

2005–2010
> *Coordinator*, European Social Fund Higher Education Projects in Computer Science, University of Venice, Italy

2009–present

    Member, Executive Committee of the Interdepartmental Center for the Analysis of the Dynamic Interactions Among Economics, Environment, and Society (IDEAS), University of Venice, Italy

2004–present

    Member, Board of Study of the PhD School of Computer Science, University of Venice, Italy

1995–present

    Director, Computer Vision and Pattern Recognition Lab, University of Venice, Italy

Teaching

Lower-division undergraduate courses

- Design and Analysis of Algorithms, University of Venice (2002–)

- History of Computing Sciences, University of Venice (2006–2008)

- Operating Systems Lab., University of Venice (1996–2001)

- Introduction to Operating Systems, University of Venice (1996)

- Computer Science Basics, Accademia di Belle Arti di Venezia (2001–02)

Upper-division undergraduate courses

- Artificial Intelligence, University of Venice (1996–2001, 2008–)

- Information Theory, University of Venice (2000–)

- Neural Networks, University of Venice (2002–2008)

- Computer Vision, University of Venice (2002–2008)

- Introduction to Artificial Neural Networks, Universität Wien, Austria (2002, 2003, 2008)

- Formal Languages and Compilers, University of Bari, Italy (1992–1994)

Graduate courses

- History and Philosophy of Science, University of Venice (2008)

- Neural Networks, University of Venice (1996)

- Computer Vision, University of Venice (1997, 1999)

Professional services

Editorial appointments

- Editorial Board Member, IEEE Transactions on Pattern Analysis and Machine Intelligence (2007–2011)

- Advisory Board Member, International Journal of Machine Learning and Cybernetics (2014–)

- Editorial Board Member, Frontiers in Computer Image Analysis (2014–)

- Editorial Board Member, Scienze e Ricerche (2014–)

- Editorial Board Member, Brain Informatics (2014–)

- Editorial Board Member, IET Computer Vision (2013–)

- Editorial Board Member, Pattern Recognition (2004–)

- Guest Editor, Pattern Recognition Letters, Special issue on "Philosophical aspects of pattern recognition," to appear

- Guest Editor, IEEE Transactions on Neural Networks and Learning Systems, Special issue on "Learning in non-(geo)metric spaces," to appear

- Guest Editor, Pattern Recognition, Special issue on "Similarity-Based Pattern Recognition," October 2006

- Guest Editor, IEEE Transactions on Pattern Analysis and Machine Intelligence, Special issue on "Energy Minimization Methods in Computer Vision and Pattern Recognition," November 2003 (Part I) and February 2004 (Part II)

- Guest Editor, IEEE Transactions on Pattern Analysis and Machine Intelligence, Special issue on "Graph Algorithms in Computer Vision," October 2001

- Guest Editor, Pattern Recognition, Special issue on "Energy Minimization Methods in Computer Vision and Pattern Recognition," April 2000

Conference and workshop organization

- General Chair, ICCV 2017: IEEE International Conference on Computer Vision, Venice, Italy, October 2017

- Program Chair (with A. Feragen and M. Loog), SIMBAD 2015: 3rd International Workshop on Similarity-Based Pattern Analysis and Recognition, Copenhagen, Denmark, October 2015

- Area Chair, ICIAP 2015: 18th International Conference on Image Analysis and Processing, Genova, Italy, September 2015

- Program Chair (with. K. Apt, J. Lang and E. Marchiori), Workshop on Clusters, Games and Axioms, Lorentz Center, Leiden, The Netherlands, June 2015

- Advisory Board Member, MLDM.it 2014: 3rd Italian Workshop on Machine Learning and Data Mining, Pisa, Italy, December 2014

- Program Chair (with G. Brown, F. Escolano and M. Loog), S+SSPR 2014: Joint IAPR International Workshops on Structural and Syntactic Pattern Recognition, and Statistical Techniques in Pattern Recognition, Joensuu, Finland, August 2014

- Area Chair, ICPR 2014: 22nd International Conference on Pattern Recognition, Stockholm, Sweden, August 2014

- Program Chair (with E. R. Hancock), SIMBAD 2013: 2nd International Workshop on Similarity-Based Pattern Analysis and Recognition, York, UK, July 2013

- Publicity Chair, ECCV 2012: 12th European Conference on Computer Vision, Florence, Italy, October 2012

- Program Chair (with J. Buhmann, T. Caetano, B. Schölkopf, and L. Wasserman), NIPS 2011 Workshop on Philosophy and Machine Learning, Sierra Nevada, Spain, December 2011.

- Program Chair (with E. R. Hancock), SIMBAD 2011: 1st International Workshop on Similarity-Based Pattern Analysis and Recognition, Venice, Italy, September 2011

- Special Session Chair, S+SSPR 2010: Joint IAPR International Workshops on Structural and Syntactic Pattern Recognition, and Statistical Techniques in Pattern Recognition, Special session on Similarity-Based Pattern Recognition: Challenges and Prospects, Cesme, Turkey, August 2010

- Program Chair (with J. Buhmann, R. Duin, M. Figueiredo, E. R. Hancock, and V. Murino), ICML 2010 Workshop on Learning in Non-(geo)metric Spaces, Haifa, Israel, June 2010.

- Local Organization Chair, LION 4: Learning and Intelligent OptimizatioN, Venice, Italy, January 2010

- Special Session Chair (with S. Rota Bulò), LION 4: Learning and Intelligent OptimizatioN, Special session on Learning and Intelligent Optimization in Structured Domains, Venice, Italy, January 2010

- Program Chair (with G. Medioni, S. Seitz, and R. Zabih), IWCV 2008: 1st International Workshop on Computer Vision, Venice, Italy, May 2008

- Program Chair (with J. Koenderink and S. W. Zucker), International Workshop on the Foundations of Computer Vision: Light, Space, and Matter, Bertinoro, Italy, June 2007

- Program Chair (with J. Koenderink and S. W. Zucker), International Workshop on Early Vision: Computational and Biological, Bertinoro, Italy, May 2005

- Program Chair (with M. Budinich), NIPS*99 Workshop on Complexity and Neural Computation: The Average and the Worst Case, Breckenridge, CO, December 1999

- Special Session Chair, ICIAP'99: 10th International Conference on Image Analysis and Processing, Special session on Graph-theoretic Techniques in Computer Vision, Venice, Italy, September 1999

- Organization Committee Member, ICIAP'99: 10th International Conference on Image Analysis and Processing, Venice, Italy, September 1999

- Program Chair (with E. R. Hancock), EMMCVPR'99: 2nd International Workshop on Energy Minimization Methods in Computer Vision and Pattern Recognition, York, England, July 1999

- Organization Committee Member, ESA'98: European Symposium on Algorithms, Venice, Italy, August 1998

- Program Chair (with I. M. Bomze and M. Budinich), MAX-CLIQUE'97: A Workshop on the Maximum Clique Problem and Its Applications, Trieste, Italy, June 1997

- Organization Committee Member, WAE'97: Workshop on Algorithm Engineering, Venice, Italy, September 1997

- Program Chair (with E. R. Hancock), EMMCVPR'97: 1st International Workshop on Energy Minimization Methods in Computer Vision and Pattern Recognition, Venice, Italy, May 1997

Steering committee member

- EMMCVPR: The International Conference on Energy Minimization Methods in Computer Vision and Pattern Recognition (*chair and founding member*).

- SIMBAD: The International Workshop on Similarity-Based Pattern Analysis and Recognition (*chair and founding member*).

Program committee member

- IEEE International Workshop on Graph Algorithms and Computer Vision, Corfu, Greece, September 1999

- 15th International Conference on Pattern Recognition (ICPR 2000), Barcelona, Spain, September 2000

- 3rd International Workshop on Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR'01), Sophia Antipolis, France, September 2001

- 7th Computer Vision Winter Workshop (CVWW'02), Bad Aussee, Austria, February 2002

- IASTED International Conference on Signal Processing, Pattern Recognition, and Applications (SPPRA'03), Rhodes, Greece, June 2003

- 4th IAPR Workshop on Graph-based Representations in Pattern Recognition (GbR 2003), York, UK, June 2003

- 4th International Workshop on Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR'03), Lisbon, Portugal, July 2003

- 1st IAPR Workshop on Artificial Neural Networks and Pattern Recognition (ANNPR'03), Florence, Italy, September 2003

- 4th International Workshop on Pattern Recognition in Information Systems (PRIS'04), Porto, Portugal, April 2004

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR'04), Washington, DC, July 2004

- 17th International Conference on Pattern Recognition (ICPR'04), Cambridge, UK, August 2004

- 5th International Workshop on Pattern Recognition in Information Systems (PRIS'05), Miami, FL, May 2005

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR'05), San Diego, CA, June 2005

- 10th IEEE International Conference on Computer Vision (ICCV'05), Beijing, China, October 2005

- 5th International Workshop on Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR'05), St. Augustine, FL, November 2005

- 9th European Conference on Computer Vision (ECCV'06), Graz, Austria, May 2006

- 6th International Workshop on Pattern Recognition in Information Systems (PRIS'06), Paphos, Cyprus, May 2006

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR'06), New York, NY, June 2006

- 2nd IAPR Workshop on Artificial Neural Networks and Pattern Recognition (ANNPR'06), Ulm, Germany, September 2006

- Learning and Intelligent OptimizatioN (LION 2007), Andalo (Trento), Italy, February 2007

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR'07), Minneapolis, Minnesota, June 2007

- 6th IAPR Workshop on Graph-based Representations in Pattern Recognition (GbR 2007), Alicante, Spain, June 2007

- 6th International Conference on Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR'07), EZhou, Hubei, China, August 2007

- 14th International Conference on Image Analysis and Processing (ICIAP'07), Modena, Italy, September 2007

- 11th IEEE International Conference on Computer Vision (ICCV'07), Rio de Janeiro, Brazil, October 2007

- Learning and Intelligent OptimizatioN (LION 2007 II), Trento, Italy, December 2007

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR'08), Anchorage, Alaska, June 2008

- 3rd International Workshop on Artificial Neural Networks in Pattern Recognition (ANNPR'08), Paris, France, July 2008

- 10th European Conference on Computer Vision (ECCV'08), Marseille, France, October 2008

- 19th International Conference on Pattern Recognition (ICPR'08), Tampa, FL, December 2008

- Learning and Intelligent OptimizatioN (LION 3), Trento, Italy, January 2009

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR'09), Miami, FL, June 2009

- 7th IAPR Workshop on Graph-based Representations in Pattern Recognition (GbR 2009), Venice, Italy, May 2009

- 7th International Conference on Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR'09), Bonn, Germany, August 2009

- 15th International Conference on Image Analysis and Processing (ICIAP'09), Vietri sul mare, Italy, September 2009

- 12th IEEE International Conference on Computer Vision (ICCV'09), Kyoto, Japan, October 2009

- Learning and Intelligent OptimizatioN (LION 4), Venice, Italy, January 2010

- 4th International Workshop on Artificial Neural Networks in Pattern Recognition (ANNPR'10), Cairo, Egypt, April 2010

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR'10), San Francisco, CA, June 2010

- 10th International Workshop on Pattern Recognition in Information Systems (PRIS'10), Funchal, Madeira, Portugal , June 2010

- 20th International Conference on Pattern Recognition (ICPR 2010), Istanbul, Turkey, August 2010

- Joint IAPR International Workshops on Structural and Syntactic Pattern Recognition and Statistical Techniques in Pattern Recognition (S+SSPR 2010), Cesme, Izmir, Turkey, August 2010

- 11th European Conference on Computer Vision (ECCV'10), Crete, Greece, September 2010

- 1st International Workshop on Parts and Attributes (in conjuction with ECCV'10), Crete, Greece, September 2010

- Learning and Intelligent OptimizatioN (LION 5), Rome, Italy, January 2011

- 8th International Conference on Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR'11), St. Petersburg, Russia, July 2011

- Workshop on Graphs and Complex Object Matching (G-COM 2011), in conjunction with IEEE/WIC/ACM International Conferences on Web Intelligence and Intelligent Agent Technology (WI-IAT2011), Lyon, France, August 2011

- 16th International Conference on Image Analysis and Processing (ICIAP'11), Ravenna, Italy, September 2011

- ITinCVPR-2011: 1st International Workshop on Information Theory in Computer Vision and Pattern Recognition (in Conjunction with ICCV'2011), Barcelona, Spain, November 2011

- Learning and Intelligent OptimizatioN (LION 2012), Paris, France, January 2012

- 1st International Conference on Pattern Recognition Applications and Methods (ICPRAM 2012), Algarve, Portugal, February 2012

- 4th International Workshop on Computational Topology in Image Context (CTIC 2012), Bertinoro, Italy, February 2012

- Joint IAPR International Workshops on Structural and Syntactic Pattern Recognition and Statistical Techniques in Pattern Recognition (S+SSPR 2012), Hiroshima-Nagasaki, Japan, November 2012

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR'12), Providence, Rhode Island, June 2012

- European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD 2012), Bristol, UK, September 2012

- 21st International Conference on Pattern Recognition (ICPR 2012), Tsukuba Science City, Japan, November 2012

- Learning and Intelligent OptimizatioN (LION 7), Catania, Italy, January 2013

- 2nd International Conference on Pattern Recognition Applications and Methods (ICPRAM 2013), Barcelona, Spain, February 2013

- 6th Iberian Conference on Pattern Recognition and Image Analysis (IbPRIA 2013), Madeira, Portugal, June 2013

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR'13), Portland, Oregon, June 2013

- 23rd International Joint Conference on Artificial Intelligence (IJCAI'13), Beijing, China, August 2013

- 9th International Conference on Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR'13), Lund, Sweden, August 2013

- 17th International Conference on Image Analysis and Processing (ICIAP'13), Naples, Italy, September 2013

- 2nd Italian Workshop on Machine Learning and Data Mining (MLDM.it 2013), Turin, Italy, December 2013

Reviewer

Journals

IEEE Transactions on Pattern Analysis and Machine Intelligence; IEEE Transactions on Neural Networks; IEEE Transactions on Fuzzy Systems; IEEE Transactions on Medical Imaging; IEEE Transactions on Image Processing; Proceedings of the IEEE; Signal Processing; ACM Transactions on Knowledge Discovery from Data; Neurocomputing; Journal of Artificial Neural Networks; Neural Processing Letters; Pattern Recognition; Pattern Recognition Letters; International Journal of Computer Vision; Computer Vision and Image Understanding; Image and Vision Computing; Journal of Mathematical Imaging and Vision; Computerized Medical Imaging and Graphics; IEE Proceedings: Visual, Image and Signal Processing; SIAM Journal on Optimization; Journal of Global Optimization; Journal of Combinatorial Optimization; Computational Optimization and Applications; Annals of Operations Research; Optimization Letters; Discrete Applied Mathematics; Algorithmica; Journal of Mathematical Psychology.

Funding agencies

Israel Science Foundation; European Commission, 7th Framework Programme, Andrea Bocelli Foundation.

Conferences

6th International Conference on Software Engineering and Knowledge Engineering (SEKE'94); 4th European Conference on Computer Vision (ECCV'96); 3rd Italian Conference on Algorithms and Complexity (CIAC'97) 5th Israeli Symposium on Theory of Computing and Systems (ISTCS'97); 3rd Symposium on Intelligent Data Analysis (IDA'99); 10th International Conference on Image Analysis and Processing (ICIAP'99); International Joint Conference on Neural Networks (IJCNN'2000); Advances in Neural Information Processing Systems (NIPS 2008, 2009, 2012); International Conference on Image Processing (ICIP 2011, 2012).

Ph.D. theses

- Diego Tosato, University of Verona, Italy, 2012

- Julian McAuley, Australian National University, Australia, 2011

- Fabio Vitale, University of Milan, Italy, 2011

- Pendong Xiao, Australian National University, Australia, 2010

- Nicola Rebagliati, University of Genoa, Italy, 2010

- Abdur R. M. J. U. Jamali, University of Turin, Italy, 2009

- Miguel Angel Lozano Ortega, University of Alicante, Spain, 2007

Invited lectures and tutorials

Invited lectures at international conferences and summer schools

- Invited speaker, INIT/AERFAI 2015 International Summer School on Machine Learning, Benicassim, Spain, June 2015

- Keynote speaker, GbR 2015: 10th IAPR Workshop on Graph-based Representations in Pattern Recognition, Beijing, China, May 2015

- Keynote speaker, ICPRAM 2015: 4th International Conference on Pattern Recognition Methods and Applications, Lisbon, Portugal, January 2015

- Keynote speaker, VSS 2015, Workhop on Video Soft Sensing, Belfast, UK, December 2014

- Invited speaker, VISMAC 2014: School of the International Association for Pattern Recognition (IAPR) (Italian Chapter), Marina di Ascea, Italy, June 2014

- Invited speaker, 10th International Workshop on Complex Systems and Networks, Vancouver, Canada, December 2013

- Invited speaker, 2nd Andrea Bocelli Foundation (ABF) MIT Challenge Workshop, Cambridge, MA, December 2013

- Invited speaker, IEEE SMC Celebration Lecture Series, Baoding/Tianjin, China, July 2013

- Keynote speaker, ICMLC 2013: 12th International Conference on Machine Learning and Cybernetics, Tianjin, China, July 2013

- Invited speaker, MCS 2013: 11th International Conference on Multiple Classifier Systems, Nanjing, China, May 2013

- Invited speaker, IEEE SMC Celebration Lecture Series, Belfast, UK, March 2013

- Invited speaker, IEEE SMC 2013 Strategic Workshop on "Understanding the cyber world: A rendez-vous for machine learning, pattern recognition, and cybernetics," Belfast, UK, March 2013

- Invited speaker, VISMAC 2012: School of the International Association for Pattern Recognition (IAPR) (Italian Chapter), Genova, Italy, October 2012

- Invited speaker, ICVSS 2012: International Computer Vision Summer School, Punta Sampieri, Sicily, Italy, July 2012

- Invited speaker, Summer School on Graphs in Computer Graphics, Image and Signal Analysis, Bornholm, Denmark, August 2011

- Invited speaker, 5th Iberian Conference on Pattern Recognition and Image Analysis (IbPRIA 2011), Gran Canaria, Spain, June 2011

- Invited speaker, VISMAC 2010: School of the International Association for Pattern Recognition (IAPR) (Italian Chapter), Catania, Italy, November 2010

- Keynote speaker, 9th International Workshop on Pattern Recognition in Information Systems (PRIS 2009), Milan, Italy, May 2009

- Invited speaker, Machine Learning Summer School (MLSS 2009), Canberra, Australia, February 2009

- Invited speaker, NATO Advanced Research Workshop on Limitations and Future Trends in Neural Computation, Siena, Italy, October 2001

- Invited speaker, VISMAC 2000: School of the International Association for Pattern Recognition (IAPR) (Italian Chapter), Modena, Italy, October 2000

- Invited speaker, Conference on Approximation and Complexity in Numerical Optimization: Continuous and Discrete Problems, Gainesville, FL, March 1999

- Invited speaker, 2nd Asian Conference on Computer Vision (ACCV'95), Singapore, December 1995

- Invited speaker, NIPS*95 Workshop on Optimization-Problem Solving with Neural Nets, Vail, Colorado, December 1995

Panels

- Panelist, GIRPR 2014, Workshop of the International Association for Pattern Recognition (IAPR), Marina di Ascea, Italy, June 2014

- Panelist, ICMLC 2013: 12th International Conference on Machine Learning and Cybernetics, Tianjin, China, July 2013

- Panelist, GIRPR 2012, Workshop of the International Association for Pattern Recognition (IAPR), Siena, Italy, May 2012

- Panelist, NIPS 2011 Workshop on Philosophy and Machine Learning, Sierra Nevada, Spain, December 2011

- Panelist, Summer School on Graph Methods in Computer Graphics and Image Analysis, Bornholm, Denmark, August 2011

- Moderator, ICML 2010 Workshop on Learning in Non-(geo)metric Spaces, Haifa, Israel, June 2010

- Panelist, Secondo Workshop Interdipartimentale, Dipartimenti di Chimica, Chimica Fisica, Scienze Ambientali, Università Ca Foscari di Venezia, May 2007

- Panelist, NATO Advanced Research Workshop on Limitations and Future Trends in Neural Computation, Siena, Italy, October 2001

Tutorials at international conferences

- "Philosophical Aspects of Pattern Recognition," ICPR 2014: 22nd International Conference on Pattern Recognition, Stockholm, Sweden, August 2014

- "Similarity-Based Pattern Analysis and Recognition" (with E. R. Hancock, V. Murino, and R. Wilson), ECCV 2012: 12th European Conference on Computer Vision, Florence, Italy, October 2012

- "Beyond Features: Similarity-Based Pattern Analysis and Recognition" (with E. R. Hancock and V. Murino), ICIAP 2011: 16th International Conference on Image Analysis and Processing, Ravenna, Italy, September 2011

- "Game Theory in Computer Vision and Pattern Recognition" (with A. Torsello), CVPR 2011: IEEE Conference on Computer Vision and Pattern Recognition, Colorado Springs, CO, June 2011

- "Game Theory and Pattern Recognition", PRIA 2010: 10th International Conference on Pattern Recognition and Image Analysis, St. Petersburg, Russia, December 2010

- "Game Theory in Pattern Recognition and Machine Learning" (with A. Torsello), ICPR 2010: 20th International Conference on Pattern Recognition, Istanbul, Turkey, August 2010

Invited seminars

- *6/89*: IBM Scientific Center, Rome, Italy

- *11/89*: Seminario di Storia della Scienza, Facoltà di Lettere e Filosofia, Università di Bari, Italy.

- *2/91*: Seminario di Storia della Scienza, Facoltà di Lettere e Filosofia, Università di Bari, Italy.

- *9/95*: Department of Electronic and Electrical Engineering, University of Surrey, Guildford, United Kingdom.

- *10/95*: Dipartimento di Matematica Applicata e Informatica, Università Ca' Foscari di Venezia, Italy.

- *10/95*: McGill Center for Intelligent Machines, Department of Electrical Engineering, McGill University, Montréal, Québec, Canada.

- *5/96*: Dipartimento di Elettronica e Informatica, Università di Padova, Italy.

- *7/96*: Department of Computer Science, University of York, United Kingdom.

- *1/97*: Institut für Statistik, Operations Research und Computerverfahren, Universität Wien, Austria.

- *2/97*: Dipartimento di Matematica, Università di Trento, Italy.

- *10/97*: Courant Institute of Mathematical Sciences, New York University, USA.

- *10/97*: Center for Computational Vision and Control, Department of Computer Science, Yale University, New Haven, CT, USA.

- *6/99*: Institut für Statistik, Operations Research und Computerverfahren, Universität Wien, Austria (ISOC Kolloquium).

- *10/99*: Dipartimento di Elettronica e Informatica, Università di Padova, Italy.

- *10/99*: Dipartimento di Matematica, Università di Bologna, Italy.

- *12/99*: Corso di Laurea in Scienze dell'Informazione, Università di Bologna, Sede di Cesena, Italy.

- *9/00*: Gatsby Computational Neuroscience Unit, University College London, United Kingdom.

- *9/00*: Department of Computer Science University of York, United Kingdom.

- *9/00*: Department of Electronic and Electrical Engineering, University of Surrey, Guildford, United Kingdom.

- *10/00*: Institute of Computer Aided Automation, Vienna University of Technology (TU-Wien), Vienna, Austria.

- *10/00*: INRIA, Sophia-Antipolis, France.

- *2/01*: Dipartimento di Sistemi e Informatica, Università di Firenze, Italy.

- *3/01*: Dipartimento di Biologia, Università di Bologna, Italy.

- *12/01*: School of Computer Science, McGill University, Montréal, Canada.

- *10/03*: Dipartimento di Informatica, Università di Verona, Italy.

- *11/03*: Dipartimento di Informatica e Scienze dell'Informazione, Università di Genova, Italy.

- *5/08*: Institut für Statistik und Decision Support Systems, Universität Wien, Austria (ISDS Kolloquium).

- *6/08*: EECS, Computer Science Division, University of California at Berkeley, USA.

- *1/09*: Department of Mathematics and Statistics, McGill University, Montréal, Québec, Canada.

- *1/09*: School of Computer Science, McGill University, Montréal, Québec, Canada (SOCS Colloquium).

- *2/09*: National ICT Australia (NICTA), Canberra, Australia.

- *6/09*: Dipartimento di Informatica, Università di Trento, Italy.

- *6/10*: Department of Computer Science, Technion, Haifa, Israel (Pixel Club Lecture).

- *1/11*: Institut für Statistik und Decision Support Systems, Universität Wien, Austria (ISOR-Kolloquium)

- *3/11*: Dipartimento di Matematica Pura ed Applicata, Università di Padova, Italy.

- *3/11*: Dipartimento di Psicologia Generale, Università di Padova, Italy.

- *7/11*: National ICT Australia (NICTA), Canberra, Australia (series of three lectures).

- *8/11*: Department of Electrical and Electronic Engineering, University of Melbourne, Australia.

- *1/12*: Centro Culturale Candiani, Mestre, Venezia.

- *2/12*: Dipartimento di Ingegneria dell'Informazione, Università di Siena, Italy (series of three lectures).

- *7/12*: Media Integration and Communication Center, Florence, Italy (series of three lectures).

- *10/12*: Italian Institute of Technology, Genova, Italy

- *11/12*: Department of Computer Science, Royal Holloway, University of London, UK (series of three lectures)

- *1/13*: Dipartimento di Ingegneria e Scienza dell'Informazione DISI, Università di Trento, Italy

- *2/13*: Istituto di Analisi dei Sistemi ed Informatica "Antonio Ruberti" (IASI), Consiglio Nazionale delle Ricerche, Rome, Italy (Colloquia@IASI)

- *6/13*: Institute for Computer Graphics and Vision, Graz University of Technology, Austria

- *12/13*: Dipartimento di Ingegneria e Scienza dell'Informazione DISI, Università di Trento, Italy

- *2/14*: Centrum Wiskunde & Informatica (CWI), Amsterdam, The Netherlands

- *5/14*: European Centre for Living Technology (ECLT), Venice, Italy

Advising

Postdocs and visiting students

- André Lourenco (Ph.D. student at Instituto Superior Técnico, Lisbon, Portugal): 2012 (visiting student)

- Albert Solé Ribalta (Ph.D. student at University Rovira i Virgili, Spain): 2011–2012 (visiting student)

- Peter Kontschieder (Ph.D. student at Graz University of Technology, Austria): 2011 (visiting student)

- Samuel Rota Bulò (Ph.D., University of Venice, Italy, 2009): 2009 – present (postdoc)

- Nicola Rebagliati (Ph.D., University of Genoa, Italy, 2010): 2010 – present (postdoc)

- João Duarte (Ph.D. student at Instituto Superior Técnico, Lisbon, Portugal): 2009 (visiting student)

- Aykut Erdem (Ph.D., Middle East Technical University, Ankara, Turkey, 2008): 2008–2010 (postdoc); Now Lecturer at the Middle East Technical University

- Jian Hou (Ph.D., Harbin Institute of Technology, China, 2007): 2009–2010 (postdoc); Now Assistant Professor at the School of Information Science and Technology, Bohai University, China

- Andrea Torsello (Ph.D., University of York, UK, 2004): 2003–2005 (postdoc); Now Assistant Professor at the University of Venice

- Massimiliano Pavan (Ph.D., University of Venice, Italy, 2004): 2004–2006 (postdoc)

- Roland Glantz (Ph.D., University of Karlsruhe, Germany, 1997): 2001–2003 (postdoc); Now at Johns Hopkins University

Ph.D. thesis supervision

- Eyasu Zemene Mequanint (Ph.D. Student, University of Venice, Italy)

- Peter Kontschieder, (PhD Student, Graz University of Technology, Austria) (Co-supervisor with H. Bischof)

- Rocco Tripodi, (Ph.D. Student, University of Venice, Italy)

- Farshad Nourbakhsh, (Ph.D. Student, University of Venice, Italy)

- Teresa Scantamburlo (Ph.D. Student, University of Venice, Italy)

- Samuel Rota Bulò (Ph.D., University of Venice, Italy, 2009), "A Game-Theoretic Framework for Similarity-Based Data Clustering"; Now researcher at FBK, Trento, Italy

- Massimiliano Pavan (Ph.D., Consortium of Bologna, Padova, and Venice Universities, 2004), "A New Graph-Theoretic Approach to Clustering, with Applications to Computer Vision"; Awarded Best Student Paper Award at the 12th Int'l Conference on Image Analysis and Processing (ICIAP'03)

- Claudio Rossi (Ph.D., Consortium of Bologna, Padova, and Venice Universities, 2001), "Nature-Inspired Search Techniques for Hard Optimization Problems"; Now Professor at the Universidad Politecnica de Madrid, Spain

M.S. thesis supervision

Since 1991, supervisor (or co-supervisor) of more than 70 "Laurea" or "Laurea magistrale" (both equivalent to M.S. theses). Below are reported only those which have led to international refereed publications.

- Marco di Gesù (Laurea magistrale, CS, University of Venice, Italy, 2007); Now Programmer at SYSCON Srl

- Andrea Albarelli (Laurea magistrale, CS, University of Venice, Italy, 2006); Now postdoc at the Univeristy of Venice, Italy

- Anna Sperotto (Laurea magistrale, CS, University of Venice, Italy, 2006); Now postdoc at the University of Twente, The Netherlands

- Samuel Rota Bulò (Laurea magistrale, CS, University of Venice, Italy, 2005); Now Researcher at FBK, Trento, Italy

- Giacomo Colle (Laurea, CS, University of Venice, Italy, 2003)

- Dzena Hidović-Rowe (Laurea, CS, University of Venice, Italy, 2003); Now at the University of Birmingham, UK

- Paolo Fosser (Laurea, CS, University of Venice, Italy, 2003); Now Developer at Sanmarco Informatica SpA

- Alessio Massaro (Laurea, CS, University of Venice, Italy, 2000); Now Quant Architect at VTB Capital, London, UK

- Massimiliano Pavan (Laurea, CS, University of Venice, Italy, 1999)

- Massimo Bartoli (Laurea, CS, University of Venice, Italy, 1999); Now IT Consultant

- Andrea Torsello (Laurea, CS, University of Venice, Italy, 1997); Now Assistant Professor at the Univeristy of Venice, Italy

- Giovanna Castellano (Laurea, CS, University of Bari, Italy, 1993); Now Assistant Professor at the University of Bari, Italy

- Angelo Maffione (Laurea, CS, University of Bari, Italy, 1992); Now IT Architect at IBM

Grants

Research projects

- Scientific Advisor, National Natural Science Foundation of China, *A Game-theoretic Approach to Efficient and Robust Clustering*, 2015–2018

- Scientific Advisor, Netherlands Organization for Scientific Research (NWO), *ComGA — Combining Machine Learning and Game-theoretic Approaches for Cluster Analysis*, 2014–2016

- Scientific Coordinator, European Commission, FP7 FET-Open (STREP), *SIMBAD — Beyond Features: Similarity-Based Pattern Analysis and Recognition*, 2008–2011, EUR 2,171,000 (`http://simbad-fp7.eu`)

- Site Manager, European Commission, FP6 Network of Excellence, *PASCAL 2: Pattern Analysis, Statistical Modelling, and Computational Learning*

- Co-Principal Investigator, Regione Autonoma della Sardegna, *Security Issues in Pattern Recognition*, 2010–2013, EUR 415,684.

- Co-Principal Investigator, Evolvenda Srl, Research grant on 3D image reconstruction of glasses, 2008-2009, EUR 40,000

- Scientific Coordinator, Italian Ministry of University and Research (MIUR), *Similarity-Based Methods for Computer Vision and Pattern Recognition: Theory, Algorithms, Applications*, 2007–2009, EUR 83,160

- Co-Principal Investigator, Italian Ministry of University and Research (MIUR), *Machine Learning Methods for Structural Genomics*, 2002–2004, EUR 231,800

- Co-Principal Investigator, Italian Ministry of University and Research (MIUR), *Neural Networks for Learning in Structural Domains: Methods and Applications*, 2000–2002, EUR 162,680

Higher-education projects

- Coordinator, Regione Veneto, European Social Fund Project on *Advanced Techniques for the Knowledge Society*, 2010, EUR 21,561

- Coordinator, Regione Veneto, European Social Fund Project on *Technologies for the Knowledge Society*, 2010, EUR 50,843

- Coordinator, Regione Veneto, European Social Fund Project on *Technologies for the Information Society*, 2009, EUR 51,315

- Coordinator, Regione Veneto, European Social Fund Project on *Internet Technologies*, 2009, EUR 51,046

- Coordinator, Regione Veneto, European Social Fund Project on *Technologies for the Knowledge Society*, 2006–2007, EUR 57,243

- Coordinator, Regione Veneto, European Social Fund Project on *Methodologies for Database Design*, 2006–2007, EUR 47,494

- Coordinator, Regione Veneto, European Social Fund Project on *Software Design Methodologies*, 2006–2007, EUR 49,277

- Coordinator, Regione Veneto, European Social Fund Project on *Methodologies for the Information Society*, 2005–2006, EUR 66,211

Consulting

- VEGA, VEnice GAteway for Science and Technology, 2008–2010

- CASCADAS, Università degli Studi di Trento, 2009

- MiCROTEC GmbH – Srl, 2009

- Rubelli Srl

Miscellaneous

- Total number of citations (according to Google Scholar): 3600+

- h-index $= 30$

- $i10$-index $= 54$

- Erdös number $= 2$ (via A. Jagota)

Publications

Books

[1] M. Pelillo, E. R. Hancock (Eds.). *Energy Minimization Methods in Computer Vision and Pattern Recognition—EMMCVPR'97.* (Lecture Notes in Computer Science, vol. 1223). Springer-Verlag, Berlin, 1997.

[2] E. R. Hancock, M. Pelillo (Eds.). *Energy Minimization Methods in Computer Vision and Pattern Recognition—EMMCVPR'99.* (Lecture Notes in Computer Science, vol. 1654). Springer-Verlag, Berlin, 1999.

[3] M. Pelillo, E. R. Hancock (Eds.). *Similarity-Based Pattern Recognition—SIMBAD 2011.* (Lecture Notes in Computer Science, vol. 7005). Springer, Berlin, 2011.

[4] E. R. Hancock, M. Pelillo (Eds.). *Similarity-Based Pattern Recognition—SIMBAD 2013.* (Lecture Notes in Computer Science, vol. 7953). Springer, Berlin, 2013.

[5] M. Pelillo (Ed.). *Similarity-Based Pattern Analysis and Recognition.* (Advances in Computer Vision and Pattern Recognition Series) Springer, London, 2013.

[6] P. Fränti, G. Brown, M. Loog, F. Escolano, M. Pelillo (Eds.). *Structural, Syntactic, and Statistical Pattern Recognition—S+SSPR 2014.* (Lecture Notes in Computer Science, vol. 8621). Springer, Berlin, 2014.

Special issues edited

[1] E. R. Hancock, M. Pelillo (Guest Editors). *Pattern Recognition*, vol. 33, no. 4, April 2000. Special Issue on "Energy Minimization Methods in Computer Vision and Pattern Recognition".

[2] S. Dickinson, M. Pelillo, R. Zabih (Guest Editors). *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 23, no. 10, October 2001. Special Issue on "Graph Algorithms in Computer Vision".

[3] M. Figueiredo, E. R. Hancock, M. Pelillo, J. Zerubia (Guest Editors). *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 25, no. 11, November 2003 (Parte I). *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 26, no. 2, February 2004 (Parte II). Special Issue on "Energy Minimization Methods in Computer Vision and Pattern Recognition".

[4] M. Bicego, V. Murino, M. Pelillo, A. Torsello (Guest Editors). *Pattern Recognition*, vol. 39, no. 10, 2006. Special Issue on "Similarity-Based Pattern Recognition".

[5] M. Pelillo, E. R. Hancock, X. Li, V. Murino (Guest Editors). *IEEE Transactions on Neural Networks and Learning Systems* (to appear, 2014). Special Issue on "Learning in non-(geo)metric spaces".

[6] M. Pelillo (Guest Editor). *Pattern Recognition Letters* (to appear, 2014). Special Issue on "Philosophical aspects of pattern recognition".

Journal papers

[1] M. Pelillo, M. Refice. Learning compatibility coefficients for relaxation labeling processes. *IEEE Transactions on Pattern Analysis and Machine Intelligence* 16(9):933–945, 1994.

[2] M. Pelillo, F. Abbattista, A. Maffione. An evolutionary approach to training relaxation labeling processes. *Pattern Recognition Letters* 16(10):1069–1078, 1995.

[3] G. Castellano, A. M. Fanelli, M. Pelillo. Iterative pruning in second-order recurrent neural networks. *Neural Processing Letters* 2(6):5–8, 1995.

[4] M. Pelillo. Relaxation labeling networks for the maximum clique problem. *Journal of Artificial Neural Networks* 2(4):313–328, 1995. Special issue on "Neural Networks for Optimization".

[5] M. Pelillo, A. Jagota. Feasible and infeasible maxima in a quadratic program for maximum clique. *Journal of Artificial Neural Networks* 2(4):411-420, 1995. Special issue on "Neural Networks for Optimization".

[6] M. Pelillo. A relaxation algorithm for estimating the domain of validity of feedforward neural networks. *Neural Processing Letters* 3(3):113–121, 1996.

[7] M. Pelillo, A. M. Fanelli. Autoassociative learning in relaxation labeling networks. *Pattern Recognition Letters* 18(1):3–12, 1997

[8] G. Castellano, A. M. Fanelli, M. Pelillo. An iterative pruning algorithm for feedforward neural networks. *IEEE Transactions on Neural Networks* 8(3):519–531, 1997.

[9] M. Pelillo. The dynamics of nonlinear relaxation labeling processes. *Journal of Mathematical Imaging and Vision* 7(4):309–323, 1997.

[10] E. R. Hancock, M. Pelillo. A Bayesian interpretation for the exponential correlation associative memory. *Pattern Recognition Letters* 19(2):149–159, 1998.

[11] M. Pelillo. Replicator equations, maximal cliques, and graph isomorphism. *Neural Computation* 11(8): 2023–2045, 1999.

[12] M. Pelillo, K. Siddiqi, S. W. Zucker. Matching hierarchical structures using association graphs. *IEEE Transactions on Pattern Analysis and Machine Intelligence* 21(11):1105–1120, 1999.

[13] A. Torsello, M. Pelillo. Continuous-time relaxation labeling processes. *Pattern Recognition* 33(11):1897–1908, 2000.

[14] I. M. Bomze, M. Pelillo, V. Stix. Approximating the maximum weight clique using replicator dynamics. *IEEE Transactions on Neural Networks* 11(6):1228–1241, 2000.

[15] A. Massaro, M. Pelillo, I. M. Bomze. A complementary pivoting approach to the maximum weight clique problem. *SIAM Journal on Optimization* 12(4):928–948, 2002.

[16] I. M. Bomze, M. Budinich, M. Pelillo, C. Rossi. Annealed replication: A new heuristic for the maximum clique problem. *Discrete Applied Mathematics* 121(1–3):27–49, 2002.

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[18] A. Massaro, M. Pelillo. Matching graphs by pivoting. *Pattern Recognition Letters* 24(8):1099-1106, 2003.

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[20] R. Glantz, M. Pelillo, W. G. Kropatsch. Matching segmentation hierarchies. *International Journal of Pattern Recognition and Artificial Intelligence* 18(3):397–414, 2004. Special issue on "Graph Matching in Computer Vision and Pattern Recognition".

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[22] A. Torsello, D. Hidović-Rowe, M. Pelillo. Polynomial-time metrics for attributed trees. *IEEE Transactions on Pattern Analysis and Machine Intelligence* 27(7):1087–1099, 2005. Special issue on "Structural and Syntactic Pattern Recognition".

[23] M. Pelillo, A. Torsello. Payoff-monotonic game dynamics and the maximum clique problem. *Neural Computation* 18(5):1215–1258, 2006.

[24] R. Glantz, M. Pelillo. Graph polynomials from principal pivoting. *Discrete Mathematics* 306(24):3252–3266, 2006.

[25] M. Pavan, M. Pelillo. Dominant sets and pairwise clustering. *IEEE Transactions on Pattern Analysis and Machine Intelligence* 29(1):167–172, 2007.

[26] S. Rota Bulò, M. Pelillo. A generalization of the Motzkin-Straus theorem to hypergraphs. *Optimization Letters* 3(2):287–295, 2009.

[27] S. Rota Bulò, A. Torsello, M. Pelillo. A game-theoretic approach for partial clique enumeration. *Image and Vision Computing* 27(7):911–922, 2009.

[28] S. Rota Bulò, M. Pelillo, I. M. Bomze. Graph-based quadratic optimization: A fast evolutionary approach. *Computer Vision and Image Understanding* 115(7):984–995, 2011.

[29] S. Rota Bulò, M. Rabbi, M. Pelillo. Content-based image retrieval with relevance feedback using random walks. *Pattern Recognition* 44(9):2109–2122, 2011.

[30] A. Erdem, M. Pelillo. Graph transduction as a noncooperative game. *Neural Computation* 24(3):700–723, 2012.

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[34] J. Hou, M. Pelillo. A simple feature combination method based on dominant sets. *Pattern Recognition* 46(11):3129–3139, 2013.

[35] N. Di Mauro, P. Frasconi, F. Angiulli, D. Bacciu, M. de Gemmis, F. Esposito, N. Fanizzi, S. Ferilli, M. Gori, F. Lisi, P. Lops, D. Malerba, A. Micheli, M. Pelillo, F. Ricci, F. Riguzzi, L. Saitta, G. Semeraro. Italian machine learning and data mining research: The last years. *Intelligenza Artificiale* 7:77–89, 2013.

[36] M. Pelillo. Alhazen and the nearest neighbor rule. *Pattern Recognition Letters* 38:34–37, 2014.

[37] P. Kontschieder, S. Rota Bulò, M. Pelillo, H. Bischof. Structured labels in random forests for semantic labeling and object detection. *IEEE Transactions on Pattern Analysis and Machine Intelligence* 36(10):2104–2116, 2014.

[38] A. Lourenço, S. Rota Bulò, N. Rebagliati, A. Fred, M. Figueiredo, M. Pelillo. Probabilistic consensus clustering using evidence accumulation. *Machine Learning* (in press).

[39] F. Nourbakhsh, S. Rota Bulò, M. Pelillo. A matrix factorization approach to graph compression with partial information. *International Journal of Machine Learning and Cybernetics* (accepted for publication).

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[1] I. M. Bomze, M. Budinich, P. M. Pardalos, M. Pelillo. The maximum clique problem, In: D.-Z. Du and P. M. Pardalos (Eds.), *Handbook of Combinatorial Optimization, Supplement Volume A*. Kluwer Academic Publishers, Boston, MA, pp. 1–74, 1999.

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[3] M. Pelillo. Replicator dynamics in combinatorial optimization, In: C. A. Floudas and P. M. Pardalos (Eds.), *Encyclopedia of Optimization*. Kluwer Academic Publishers, Boston, MA, vol 5, pp. 23–35, 2001. (2nd edition, 2009, pp. 3279–3291)

[4] A. Massaro, M. Pelillo. A pivoting-based heuristic for the maximum clique problem, In: N. Hadjisavvas and P. M. Pardalos (Eds.), *Advances in Convex Analysis and Global Optimization* (Chapter 23). Kluwer Academic Publishers, Boston, MA, pp. 383–394, 2001.

[5] M. Pelillo. Computational complexity and the elusiveness of global optima. In: S. Ablameyko, M. Gori, L. Goras, and V. Piuri (Eds.), *Limitations and Future Trends in Neural Computation*. IOS Press, Amsterdam, The Netherlands, pp. 71–93, 2003.

[6] M. Pelillo. Introduction: The SIMBAD project. In: M. Pelillo (Ed.). *Similarity-Based Pattern Analysis and Recognition*. Springer, London, pp. 1–10, 2013.

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[9] M. Pelillo, S. Rota Bulò. Clustering games. In: R. Cipolla, S. Battiato, and G. M. Farinella (Eds.), *Registration and Recognition in Images and Videos*. Springer, Berlin, Germany, pp. 157–186, 2014.

Refereed conference papers

[1] M. Pelillo, S. Scarci. Handling dictation ambiguities in the production of text from large-vocabulary speech recognition. *Proc. VERBA90—International Conference on Speech Technologies*. Rome, Italy, pp. 380–384, 1990.

[2] M. Pelillo, M. Refice. Syntactic category disambiguation through relaxation processes. *Proc. EuroSpeech'91—2nd European Conference on Speech Communication and Technology*. Genova, Italy, pp. 757–760, 1991.

[3] M. Pelillo, M. Refice. An optimization algorithm for determining the compatibility coefficients of relaxation labeling processes. *Proc. ICPR'92—11th International Conference on Pattern Recognition*. The Hague, The Netherlands, pp. 145–148, 1992. IEEE Computer Society Press, Los Alamitos, CA.

[4] M. Pelillo, M. Refice. Learning compatibility coefficients for word-class disambiguation relaxation processes. *Proc. ICSLP'92—1992 International Conference on Spoken Language Processing*. Banff, Canada, pp. 389–392, 1992.

[5] M. Pelillo, F. Moro, M. Refice. Probabilistic prediction of parts-of-speech from word-spelling using decision trees. *Proc. ICSLP'92—1992 International Conference on Spoken Language Processing*. Banff, Canada, pp. 1343–1346, 1992.

[6] M. Pelillo, A. M. Fanelli. A method of pruning layered feed-forward neural networks. In: J. Mira, J. Cabestany, and A. Prieto (Eds.). *New Trends in Neural Computation* (Lecture Notes in Computer Science, Vol. 686). Springer-Verlag, Berlin, pp. 278–283, 1993.

[7] M. Pelillo. Relaxation labeling processes for the traveling salesman problem. *Proc. IJCNN'93—1993 International Joint Conference on Neural Networks*. Nagoya, Japan, pp. 2429–2432, 1993. IEEE Catalog Number 93CH3353-0.

[8] G. Castellano, A. M. Fanelli, M. Pelillo. An empirical comparison of node pruning methods for layered feed-forward neural networks. *Proc. IJCNN'93—1993 International Joint Conference on Neural Networks*. Nagoya, Japan, pp. 321–326, 1993. IEEE Catalog Number: 93CH3353-0.

[9] M. Pelillo, F. Abbattista, A. Maffione. Evolutionary learning for relaxation labeling processes. In: P. Torasso (Ed.). *Advances in Artificial Intelligence* (Lecture Notes in Artificial Intelligence, Vol. 728). Springer-Verlag, Berlin, pp. 230–241, 1993.

[10] M. Pelillo, F. Abbattista, N. Abbattista. Globally optimal learning for relaxation labeling by simulated annealing. In: S. Impedovo (Ed.). *Progress in Image Analysis and Processing III*. World Scientific, Singapore, pp. 241–247, 1994.

[11] F. Abbattista, A. M. Fanelli, M. Pelillo. An evolutionary approach to vector quantizer design. In: S. Impedovo (Ed.). *Progress in Image Analysis and Processing III*. World Scientific, Singapore, pp. 254–257, 1994.

[12] M. Pelillo, A. Maffione. Using simulated annealing to train relaxation labeling processes. In: M. Marinaro and P. G. Morasso (Eds.). *ICANN'94—Proc. International Conference on Artificial Neural Networks*. Springer-Verlag, Berlin, pp. 250–253, 1994.

[13] G. Castellano, A. M. Fanelli, M. Pelillo. Pruning in recurrent neural networks. In: M. Marinaro and P. G. Morasso (Eds.). *ICANN'94—Proc. International Conference on Artificial Neural Networks*. Springer-Verlag, Berlin, pp. 451–454, 1994.

[14] M. Pelillo. On the dynamics of relaxation labeling processes. *Proc. ICNN'94—IEEE International Conference on Neural Networks*. Orlando, Florida, pp. 1006–1011, 1994. IEEE Catalog Number 94CH3429-8.

[15] M. Pelillo. Nonlinear relaxation labeling as growth transformation. *Proc. ICPR'94—12th International Conference on Pattern Recognition*. Jerusalem, Israel, pp. 201–206, 1994. IEEE Computer Society Press, Los Alamitos, CA.

[16] M. Pelillo, F. Abbattista, A. Maffione. Teaching relaxation labeling processes using genetic algorithms. In: D. W. Pearson, N. C. Steele, and R. F. Albrecht (Eds.). *Artificial Neural Nets and Genetic Algorithms*. Springer-Verlag, Wien, pp. 57–60, 1995.

[17] M. Pelillo, A. M. Fanelli. An asymmetric associative memory model based on relaxation labeling processes. *Proc. ESANN'95—3rd European Symposium on Artificial Neural Networks*. Brussels, Belgium, pp. 223–228, 1995.

[18] M. Pelillo. Relaxation labeling networks that solve the maximum clique problem. *Proc. ANN'95—4th IEE International Conference on Artificial Neural Networks*. Cambridge, England, pp. 166–170, 1995.

[19] M. Pelillo. A relaxation algorithm for estimating the domain of validity of feedforward neural networks. *Proc. ICANN'95—International Conference on Artificial Neural Networks*. Paris, France, vol. 2, pp. 443–448, 1995.

[20] M. Pelillo. Clique finding relaxation labeling networks,[1] In: S. Z. Li, D. P. Mital, E. K. Teoh, and H. Wang (Eds.). *Recent Developments in Computer Vision* (Lecture Notes in Computer Science, Vol. 1035). Springer-Verlag, Berlin, pp. 343–352, 1996.

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[1] *Invited Paper*

[21] E. R. Hancock, M. Pelillo. An analysis of the exponential correlation associative memory. *Proc. ICPR'96—13th International Conference on Pattern Recognition, Vol. IV*. Vienna, Austria, pp. 291–295, 1996. IEEE Computer Society Press, Los Alamitos, CA.

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[31] M. Pelillo, K. Siddiqi, S. W. Zucker. Continuous-based heuristics for graph and tree isomorphisms, with application to computer vision,[2] In: P. M. Pardalos (Ed.). *Approximation and Complexity in Numerical Optimization: Continuous and Discrete Problems*. Kluwer Academic Publishers, Boston, MA, pp. 422–445, 2000.

[32] I. M. Bomze, M. Budinich, M. Pelillo, C. Rossi. A new "annealed" heuristic for the maximum clique problem. In: P. M. Pardalos (Ed.). *Approximation and Complexity in Numerical Optimization: Continuous and Discrete Problems*. Kluwer Academic Publishers, Boston, MA, pp. 78–95, 2000.

[33] A. Jagota, M. Pelillo, A. Rangarajan. A new deterministic annealing algorithm for maximum clique. *Proc. IJCNN'2000–International Joint Conference on Neural Networks*. Como, Italy, Vol. VI, pp. 505–508, 2000. IEEE Computer Society Press, Los Alamitos, CA.

[34] M. Bartoli, M. Pelillo, K. Siddiqi, S. W. Zucker. Attributed tree homomorphism using association graphs. *Proc. ICPR'2000–15th Interanational Conference on Pattern Recognition*. Barcellona, Spagna, Vol. 2, pp. 133–136, 2000. IEEE Computer Society Press, Los Alamitos, CA.

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[35] M. Pelillo. Matching free trees using association graphs. In: B. Likar (Ed.). *Computer Vision—6th Computer Vision Winter Workshop*. Bled, Slovenia, pp. 276–285, 2001.

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[37] M. Pelillo, K. Siddiqi, S. W. Zucker. Many-to-many matching of attributed trees using association graphs and game dynamics. In: C. Arcelli, L. P. Cordella, and G. Sanniti di Baja (Eds.). *Visual Form 2001* (Lecture Notes in Computer Science, Vol. 2059) Springer, Berlin, pp. 583–593, 2001.

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