

Curriculum Vitae

Elena Casiraghi was born in Monza on January, the 4th, 1978.

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Dates:

- 1991 – 1996: she attended “Liceo Scientifico Statale Paolo Frisi di Monza (Milano)”, where she graduated with 52/60.
- **October** 2001: she graduated as a computer scientist from Università degli Studi di Milano, Department of Computer Science, with grade 110/110 cum Laude.
- **January** 2001: she was hired as a “trainee researcher” by the Multiple Media Department of the VTT Information Technology (Helsinki, Finland).
- **January** 2002: she won a scholarship to start her PhD studies at Università degli Studi di Milano, Department of Computer Science.
- **September-December** 2003: she was a visiting researcher at the “Image Science Institute” (ISI), in Utrecht (The Netherlands).
- **January** 2004: she was hired as a temporary researcher at Università degli Studi di Milano, Department of Computer Science.
- **March** 2005 : she got the Phd degree at Università degli Studi di Milano, Department of Computer Science.
- **May 2006-September** 2009: she was hired as an assistant professor (researcher) at Università degli Studi di Milano, Department of Computer Science “Giovanni degli Antoni”; her permanent position was confirmed on September 2009.
- **Present:** she is an assistant professor (researcher) at Università degli Studi di Milano, Department of Computer Science “Giovanni degli Antoni” .

Teaching Activities

- “Tutoring activities in the course of Basics of Computer Science” Università degli Studi di Milano, SSFM, Department of Chemistry and Medicine (A.A. 2003/2004).
- “Laboratory of Computer Science and Programming” Università Statale di Milano Bicocca, Department of Economics and Statistics (A.A. 2004/2005).

- “Summer Course of Programming” Università Statale di Milano Bicocca, Department of Economics and Statistics (A.A. 2004/2005).
- “Laboratory of Computer Science: theory and applications” Università degli Studi di Milano, SSFM, Department of Biological Sciences (A.A. 2006/2007-2007/2008).
website: <http://www.cdbiol.unimi.it/it/index.html>
- “Computer Science: theory and applications” Università degli Studi di Milano, Department of Medicine (A.A. 2007/2008-2008/2009-2009/2010).
- “Image Processing II: Università degli Studi di Milano, SSFM, Department of Computer Science. (A.A. 2007/2008-2008/2009-2009/2010-2010/2011-2011/2012-2012/2013-2013/2014).
website: <http://www.ccdinfmi.unimi.it/it/index.html>
- “Processing techniques in the field of image diagnostics (Tecniche di Elaborazione nella diagnostica per immagini)” Università degli Studi di Milano, SSFM, Department of Fisics. (A.A. 2011/2012-2012/2013-2013/2014-2014/2015-2015/2016).
- “Laboratory of computer programming” Università degli Studi di Milano, SSFM, Department of Computer Science (from A.A. 2009/2010 till present time).
website: <http://www.ccdinfmi.unimi.it/it/index.html>
- “Basics of Computer Science” Università degli Studi di Milano, SSFM, Department of Biological Sciences (A.A. 2017/2018 till present time).
website: <http://www.cdbiol.unimi.it/it/index.html>
- “Basics of Computer Science” Università degli Studi di Milano, SSFM, Department of Biotechnologies (A.A. 2017/2018 till present time).
website: <http://www.cdbiol.unimi.it/it/index.html>

Master and PhD thesis supervision: she supervised seven Master thesis and four PhD thesis.

Fundings and cooperations with industries

- **08 December 2006 - 31 December 2007:** She worked in cooperation with VIDIEMME CONSULTING S.r.l. to develop an automatic software for the identification of lung nodules at early stages from Postero Anterior chest radiographs [16]. The aforementioned research activity was funded by a contract with VIDIEMME CONSULTING S.r.l.
- **09 April 2009-08 April 2010:** She actively worked and supervised the work of researchers in the LAIV Laboratory (Università degli Studi di Milano, Department of Computer Science) during a cooperation with BioDigitalValley S.r.l.. The aim of the one-year contract was the development of novel techniques for medical image processing, and two main projects were delivered. The first one is a software system for the automatic segmentation of anatomical parts of interest from digital mouse images [27]. The second one is a software system for the automatic analysis and alignment of Gel2D images [43]. The aforementioned projects were funded by a contract with BioDigitalValley S.r.l..
- **28 October 2009-31 December 2012:** She actively worked and supervised the work of research colleagues in the LAIV Laboratory (Università degli Studi di Milano, Department of Computer Science) during a one-year cooperation with Luxottica S.r.l. to develop an automatized system for the industrial control during the process of eyeglasses preparation. The aforementioned project was funded by a contract with Luxottica S.r.l..
- **01 December 2011-31 November 2012:** She got funding from “Bando Dote Ricerca Applicata” and she was the Scientific Referee during a one-year cooperation with MOX Consulting SRL. During this year she supervised a researcher developing an application for the industrial control during preparation of spray cans.

- **Years 2016-2017-2018:** She got funding from “Bando sostegno alla Ricerca - Linea A - Young researchers” to carry out three projects entitled:
 - 2016 Development of an automatic system for blood and lymph vessels localization and quantification from microscopic images of carotid artery sections [54].
 - 2017 Development of an automatic system for localization and quantification of biological structures of interest from immunohistochemical images [3].
 - 2018 Nuclei segmentation from histological images [2].

These projects were carried on in cooperation with Consorzio M.I.A. (Università degli Studi di Milano-Bicocca, <http://www.consorziomia.org/>) and the Department of Experimental Oncology and Molecular Medicine (Fondazione IRCCS Istituto Nazionale dei Tumori).

Activity as Guest editor and Reviewer

She is Guest Editor of the Special Session “Simulation, Imaging and Modelling for Biomedical Systems”, which is part of Computers Journal (ISSN 2073-431X, <https://www.mdpi.com/journal/computers>).

She is reviewer of several journals such as:

Applied Sciences,
 Artificial Intelligence in Medicine,
 Biomedical Signal Processing and Control,
 BMC Bioinformatics,
 Computers,
 Computers in Biology and Medicine,
 Computer Methods and Programs in Biomedicine,
 Informatics,
 International Journal of Image Processing,
 IEEE Transactions on Information Technology in Biomedicine,
 IEEE Transactions on Biomedical Engineering,
 IEEE Transactions on Medical Imaging,
 IEEE Transactions on Pattern Recognition,
 Journal of Clinical Medicine,
 Journal of Imaging, Journal of Healthcare Engineering,
 Image Analysis & Stereology Machine Learning and Knowledge Extraction,
 Neurocomputing Pattern Recognition,
 Pattern Recognition Letters,
 SPIE Digital Library,

She is reviewer of several international annual conferences: CIBB, CBMS, ICIAP, ICPR, IAPR, ICTAI, ACVIS, AIA, MLIS, and others.

Activity as a member of Program Committees of Conferences and Workshops

She is member of the Technical Program Committee of the 2019 International Conference on Machine Learning and Intelligent Systems (MLIS 2019) She is member of the Program Committee of the 7th International Symposium on End-User Development (IS-EUD 2019)

She is organizer of the workshop: “EUD4HWID: Tools and Sociotechnical Frameworks”, which is part of the the 7th International Symposium on End-User Development (IS-EUD 2019)

Research Activities

Elena Casiraghi's interest in the information technology research field date to the year 2000, when she was hired as a "trainee researcher" in VTT (Valtion Teknillinen Tutkimuskeskus), Department of Information Technology. During the year spent at VTT, she started to work in the European project "Internet Middleware for Customized Service Bundling" to develop mathematical methods for the automatic insertion of digital photographs into a 3D virtual world; this problem required a continuous adaptation of the image according to the user movements into the 3D world. Her work was highly judged and treated as an important issue during the international reporting of the project. After the end of the project, she worked in a research project studying computational methods for observing early signs of deterioration of CD-ROM discs; after presenting a detailed analysis of the problem, the developed recovering system was considered as efficient and effective.

Since she began to work in Università degli Studi di Milano, Elena Casiraghi's research interests have been mainly focused in the field of artificial intelligence, to develop automatic systems for image processing and pattern recognition.

Specifically, she began her researches with investigations in the field of image processing, to develop automatic applications for face localization, identification, and recognition. These problems allowed her to study and apply supervised and unsupervised learning algorithms.

Subsequently, she focused on the medical and biomedical image processing fields, where she studied and developed computer aided diagnosis (CAD) systems.

In detail, she started working on digital chest radiographs, to detect subtle lung nodules at their early stages; the developed CAD system can be successfully applied to aid radiologists during their decision making process, thus increasing their nodule identification performance.

After these researches she focused on the problem of living donor liver transplantation and developed an automatic system for the 3D reconstructions of abdominal organs (e.g. liver, spleen, and kidney) from computed tomography (CT) images, with the final aim of measuring their volume.

Both these systems required the development of applications being able to cope with data of high dimensionality. Furthermore, her investigations lead her to the development of learning systems treating highly unbalanced learning datasets of high cardinality.

Other minor researches in the medical field were aimed at 3D volume reconstruction and biometric analysis of fetal brain from MR images.

In the bio-medical field, she developed an automatic system for the segmentation of mice images produced with molecular imaging. The system identifies anatomical organs of interest where it computes specific measurements; the precision of the obtained measures has been considered particularly helpful by pharmacologists that needed to evaluate and compare the pharmacological effect produced by different drugs, that is drugs produced according to different biochemical interactions.

All the aforementioned researches have been performed in cooperation with experts of the "Policlinico e Regina Margherita (Fondazione IRCCS)" hospital of Milan. At the present, she still keeps researching with them; specifically, exploiting the automatic systems she developed, she processes radiological images, extracts relevant data, and performs statistical analyses of the extracted data to answer clinical inquiries of medical experts.

After the aforementioned researches, she has successfully investigated and developed learning algorithms dealing with high dimensional data belonging to unbalanced datasets of both high and low cardinality.

In the latest years, she has been investigating in the field of pattern recognition, manifold learning, and intrinsic dimensionality estimation, to develop novel theories and automatic algorithms dealing with high-dimensional datasets characterized by a small cardinality (Small Sample Size Problem). These researches led to the development of methods whose performance has been evaluated both by the comparison with state of the art techniques

and by tests on synthetic and real datasets related to problems in the fields of signal processing, image analysis, and bioinformatics.

The aforementioned studies are currently exploited to investigate and experiment solutions to reduce one of the main problem of deep learning techniques, which is the huge computational (time and memory) costs. To this aim, researches are aimed at compressing deep neural networks, by reducing their layer size to the intrinsic dimension estimated on the layers' filters. To effectively reduce the filter dimension different techniques are going to be experimented.

In the past two years, she has been collaborating with the biological researchers of Consorzio M.I.A - Microscopic Image Analysis (University of Milan-Bicocca) to develop automatic systems for the microscopic image analysis.

She started her collaboration with expert biologists, as well as cardiovascular surgeons, to investigate the main factors behind carotid plaques' instability, the latest being the main cause of cerebral stroke. More specifically, during the study she developed an automatic system which is able to detect and quantify different biological structures of interest (such as vascular structures) which are immunohistochemically stained in different microscopic images of contiguous carotid sections containing plaques. Once detected and quantified, the marked contiguous sections are registered to allow an objective visual and comparative analysis of the spatial distribution of each marker (markers relative location). The developed system additionally computes novel measures of markers co-existence in tissue volumes depending on their density. Since each marker allows to detect a particular biological structure of interest, the accurate analysis and study of the computed densities and co-localization measures is considered by surgeons and biological scientists as a valid help to discover structures whose appearance could be exploited as an early alert of plaque instability, avoiding unnecessary surgical procedures. Discovering factors positively or negatively relate at plaques' instability would have an high impact on cerebral stroke prevention.

The developed system (called MIAQuant) has been lately adapted and generalized through the usage of machine learning techniques in order to be able to process images depicting tissue sections belonging to different body structures. Precisely, the novel system (called MIAQuant_Learn) extracts, quantifies and analyze the co-existence of markers characterized by any color and shape and being stained in contiguous sections extracted from any body tissue.

The promising results obtained by the MIAQuant_Learn motivate its extensive usage in the oncological field to quantify and analyze cancerous tissues images produced either by Ospedale San Raffaele (Milano) and by the Department of Experimental Oncology and Molecular Medicine (Fondazione IRCCS Istituto Nazionale dei Tumori).

During the year 2017 she started invenstigating the field of human color constancy and she studied several color correction algorithms based and/or derived from Land's "Retinex Theory". She is currently applying the STRESS algorithm to histological images with the aim of improving the segmentation results obtained by the aforementioned systems. At the present she is improving MIAQuant_Learn to segment cells.

Journal Publications

- [1] V. Huber, V. Vallacchi, V. Fleming, X. Hu, A. Cova, M. Dugo, E. Shahaj, R. Sulsenti, E. Vergani, P. Filipazzi, A. De Laurentiis, L. Lalli, L. Di Guardo, R. Patuzzo, B. Vergani, E. Casiraghi, M. Cossa, A. Gualeni, V. Bollati, F. Arienti, F. De Braud, L. Mariani, A. Villa, P. Altevogt, V. Umansky, M. Rodolfo, L. Rivoltini (August 2018). miRNAs delivered by tumor extracellular vesicles induce myeloid suppressor cells in melanoma patients and predict resistance to immunotherapy. *Journal of Cancer Investigation*, 128(12):5505-5516. doi: 10.1172/JCI98060.
- [2] E. Casiraghi, V. Huber, M. Frasca, M. Cossa, M. Tozzi, L. Rivoltini, B.E. Leone, A. Villa, B. Vergani (2018). A novel computational method for automatic segmentation, quantification and comparative analysis of immunohistochemically labeled tissue sections. *BMC BioInformatics*, 19(Suppl 10):357. doi: <https://doi.org/10.1186/s12859-018-2302-3>
- [3] E. Casiraghi, M. Cossa, V. Huber, M. Tozzi, L. Rivoltini, A. Villa, B. Vergani (Nov. 2017). MI-AQuant, a novel system for automatic segmentation, measurement, and localization comparison of differ-

ent biomarkers from serialized histological slices. *European Journal of Histochemistry*, vol. 61 (4):2838. doi: <https://doi.org/10.4081/ejh.2017.2838>.

- [4] E. Casiraghi, S. Ferraro, M. Franchin, A. Villa, B. Vergani, M. Tozzi (December 2016). Analisi semi automatica nella valutazione della neo-vascularizzazione della placca carotidea. *Italian Journal of vascular and endovascular surgery* (Minerva Medica Publishing), vol. 23 (4), pp. 55-56, Suppl.I, ISSN 1824-4777, Online ISSN 1827-1847.
- [5] P. Campadelli, E. Casiraghi, C. Ceruti, A. Rozza (2015). Intrinsic Dimension Estimation: Relevant techniques and a Benchmark Framework. *Mathematical Problems in Engineering* (Hindawi Publishing Corporation), vol. 2015, Article ID 759567, 21 pages, 2015. doi:10.1155/2015/759567.
- [6] A.A. Esposito, M. Zilocchi, P. Fasani, C. Giannitto, S. Maccagnoni, M. Maniglio, M. Campoleoni, R. Brambilla, E. Casiraghi, P.R. Biondetti (2015). The value of precontrast thoraco-abdominopelvic CT in polytrauma patients. *European Journal of Radiology*. doi:10.1016/j.ejrad.2015.02.015. ISSN 0720-048X. - 84:6 (2015 Jun), pp. 1212-1218 (Available online 3 March 2015).
- [7] C. Giannitto, A.A. Esposito, E. Casiraghi, P.R. Biondetti (2014). Epidemiological profile of non-traumatic emergencies of the neck in CT imaging: our experience. *La Radiologia Medica*. doi: 10.1007/s11547-014-0389-9 (Epub ahead of print).
- [8] C. Ceruti, S. Bassis, A. Rozza, G. Lombardi, E. Casiraghi, and P. Campadelli (2014). DANCo: Dimensionality from Angle and Norm Concentration. *PATTERN RECOGNITION*, vol. 47, Issue 8, pp. 2569-2581, ISSN: 0031-3203, doi:10.1016/j.patcog.2014.02.013.
- [9] A. Rozza, G. Lombardi, C. Ceruti, E. Casiraghi, P. Campadelli (2012). Novel high intrinsic dimensionality estimators. *MACHINE LEARNING*, vol. 89, Issue 1, pp.37-65, ISSN: 0885-6125, doi: 10.1007/s10994-012-5294-7.
- [10] A. Rozza, G. Lombardi, E. Casiraghi, P. Campadelli (2012). Novel fisher discriminant classifiers. *PATTERN RECOGNITION*, vol. 45, pp. 3725-3737, ISSN: 0031-3203, doi: 10.1016/j.patcog.2012.03.021.
- [11] F. Bredolo, A. Esposito, E. Casiraghi, G. Cornalba, P. Biondetti (2011). Intestinal interposition: the prevalence and clinical relevance of non-hepatodiaphragmatic conditions (non-Chilaiditi forms) documented by CT and review of the literature. *LA RADIOLOGIA MEDICA*, pp. 607-619, ISSN: 0033-8362, doi: 10.1007/s11547-011-0665-x.
- [12] P. Campadelli, E. Casiraghi, and S. Pratissoli (2010). A segmentation framework for abdominal organs from CT scans. *ARTIFICIAL INTELLIGENCE IN MEDICINE*, vol. 50, pp. 3-11, ISSN: 0933-3657, doi: 10.1016/j.artmed.2010.04.010.
- [13] A. Rozza, G. Lombardi, M. Rosa, E. Casiraghi (2010). O-IPCAC and its application to EEG classification. *JOURNAL OF MACHINE LEARNING RESEARCH*, vol. 11, pp. 4-11, ISSN: 1533-7928.
- [14] P. Campadelli, E. Casiraghi, S. Pratissoli, and G. Lombardi (2009). Automatic Abdominal Organ Segmentation from CT images. *ELCVIA. ELECTRONIC LETTERS ON COMPUTER VISION AND IMAGE ANALYSIS*, vol. 8, pp. 1-14, ISSN: 1577-5097.
- [15] P. Campadelli, E. Casiraghi, and A. Esposito (2008). Liver Segmentation from CT Scans : a Survey and a New Algorithm. *ARTIFICIAL INTELLIGENCE IN MEDICINE*, vol. 45, pp. 185-196, ISSN: 0933-3657, doi: 10.1016/j.artmed.2008.07.020.
- [16] P. Campadelli, E. Casiraghi, and D. Artioli (2006). A Fully Automated Method for Lung Nodule Detection From Postero-Anterior Chest Radiographs. *IEEE TRANSACTIONS ON MEDICAL IMAGING*, vol. 25, pp. 1588-1603, ISSN: 0278-0062, doi: 10.1109/TMI.2006.884198.
- [17] P. Campadelli, E. Casiraghi, and G. Valentini (2005). (2005). Support vector machines for candidate nodules classification. *NEUROCOMPUTING*, vol. 68, pp. 281-288, ISSN: 0925-2312, doi: 10.1016/j.neucom.2005.03.005.

International Conference Publications

- [17] C. Ceruti, P. Campadelli, E. Casiraghi (2017). Linear Regularized Compression of Deep Convolutional Neural Networks (ICIAF 2017). LNCS 10484, pp. 244-253, ISBN=978-3-319-68559-5, doi=10.1007/978-3-319-68560-1_22, url=http://dx.doi.org/10.1007/978-3-319-68560-1_22, Springer International Publishing.
- [18] P. Campadelli, E. Casiraghi, C. Ceruti (2015). Neighborhood Selection for Dimensionality Reduction. Proceedings of International Conference on Image Analysis and Processing (ICIAF 2015). LNCS 9279-81, pp. 183-191, ISBN=978-3-319-23230-0, doi=10.1007/978-3-319-23231-7_17, url=http://dx.doi.org/10.1007/978-3-319-23231-7_17, Springer International Publishing.
- [19] Vitellaro M., Signoroni S., Casiraghi E., Sala P., Ballardini G., Delconte G., and Bertario L. (2015) Survival rate of patients who develop cancer in rectal stump after Colectomy and IRA in FAP patients. Selected for oral Presentation at the International Society for Gastrointestinal Hereditary Tumours (InSiGHT 2015). The 6th Biennial Meeting. Sao Paulo-Brazil.
- [20] Campadelli P., Casiraghi E., Ceruti C., Lombardi G., Rozza A. (2013). Local Intrinsic Dimensionality Based Features for Clustering. Image Analysis and Processing – ICIAF 2013: 17th International Conference, Naples, Italy, September 9-13, 2013. Proceedings, Part I, , pp. 41-50, Springer Berlin Heidelberg, Berlin Heidelberg, ISBN: 978-3-642-41181-6, DOI: 10.1007/978-3-642-41181-6_5.
- [21] Bassis S., Rozza A., Ceruti C., Lombardi G., Casiraghi E., and Campadelli P. (2012), A Novel Intrinsic Dimensionality Estimator based on Rank-order Statistics. International Workshop on Clustering High-Dimensional Data (CHDD12), Naples, Italy, May 15th, 2012, Springer Verlag, LNCS, 2012.
- [22] Rozza A., Lombardi G., Rosa M., Casiraghi E., Campadelli P. (2011). IDEA: Intrinsic Dimension Estimation Algorithm. In: G. Maino, G. Foresti (Eds.). 16th International Conference on Image Analysis and Processing (ICIAF 2011): Proceedings (part I). Ravenna, Italy, September 14-16, 2011. vol. 6979, pp. 433-442, Springer New York, ISBN: 9783642240843, doi: 10.1007/978-3-642-24085-0_45.
- [23] Lombardi G., Rozza A., Ceruti C., Casiraghi E., Campadelli P. (2011). Minimum Neighbor Distance Estimators of Intrinsic Dimension. In: D. Gunopulos, T. Hofmann, D. Malerba, and M. Vazirgiannis (Eds.). Machine learning and knowledge discovery in databases: European conference (ECML PKDD 2011): Proceedings (part II). Athens, Greece, September 5-9, 2011. vol. 6912, pp. 374-389, Springer-Verlag Berlin Heidelberg, ISBN: 978-960-89282-2-0, doi: 10.1007/978-3-642-23783-6_24.
- [24] Rozza A., Lombardi G., Re M., Casiraghi E., Valentini G. (2010). DDAG K-TIPCAC: an ensemble method for protein subcellular localization. In: O. Okun, G. Valentini, and M. Re (Eds.). Supervised and Unsupervised Ensemble Methods and their Applications (ECML-SUEMA 2010): Proceedings. Barcelona, Spain, 2010.
- [25] Rozza A., Lombardi G., Casiraghi E. (2010). PIPCAC: A Novel Binary Classifier Assuming Mixtures of Gaussian Functions. In: Artificial Intelligence and Applications 2010 (AIA 2010). Innsbruck, Austria, CALGARY: M.H. Hamza, ACTA Press, ISBN: 978-0-88986-817-5.
- [26] Campadelli P., Casiraghi E., Lombardi G., Serrao G. (2009). 3D Volume Reconstruction and Biometric Analysis of Fetal Brain from MR Images. In: F. Masulli, R. Tagliaferri, and G.M. Verkhivker (Eds.). Computational Intelligence Methods for Bioinformatics and Biostatistics, 5th International Meeting (CIBB 2008): Revised Selected Papers. Vietri sul Mare, Italy, October 3-4, 2008. vol. 5488, pp. 188-197, Springer-Verlag Berlin Heidelberg, ISBN: 978-3-642-02503-7, doi: 10.1007/978-3-642-02504-4_17.
- [27] Rando G., Arca S., Casiraghi E., Campadelli P., Maggi A. (2009). Automatic Segmentation of Mouse Images. In: V. Capasso, G. Aletti, and A. Micheletti (Eds.). Stereology and Image Analysis. 10th European Conference of ISS (Ecs10): Proceedings. Milano, Italy, June 22-26, 2009. Esculapio Bologna, ISBN: 978-88-7488-310-3.
- [28] Rozza A., Lombardi G., Casiraghi E. (2009). Novel IPCA-Based Classifiers and Their Application to Spam Filtering. In: Ninth International Conference on Intelligent Systems Design and Applications (ISDA 2009): Proceedings. Pisa, Italy, November 30-December 2. pp. 797-802, IEEE Computer Society, Los Alamitos CA (USA), ISBN: 978-1-4244-4735-0, doi: 10.1109/ISDA.2009.21.

- [29] Lombardi G., Casiraghi E., Campadelli P. (2008). Curvature Estimation and Curve Inference with Tensor Voting: a New Approach. In: J. Blanc-Talon, S. Bourennane, W. Philips, D.C. Popescu, P. Scheunders (Eds.). *Advanced Concepts for Intelligent Vision Systems, 10th International Conference (ACIVS 2008): Proceedings*. Juan-les-Pins, France, October 20-24, 2008. vol. 5259, pp. 613-624, Springer Berlin, ISBN: 978-3-540-88457-6, doi: 10.1007/978-3-540-88458-3-55.
- [30] Campadelli P., Casiraghi E., Pratissoli S. (2008). Fully Automatic Segmentation of Abdominal Organs from CT Images using Fast Marching Methods. In: *21st IEEE International Symposium on Computer-Based Medical Systems (CBMS 2008): Proceedings*. Jyväskylä, Finland, June 17-19, 2008. pp. 554-559, IEEE Computer Society Press, Los Alamitos, CA (USA), ISBN: 978-0-7695-3165-6, doi: 10.1109/CBMS.2008.9.
- [31] Campadelli P., Casiraghi E., Lombardi G. (2008). The Neighbors Voting Algorithm. In: O. Okun, G. Valentini (Eds.). *Second Workshop on Supervised and Unsupervised Ensemble Methods and Their Applications (SUEMA 2008): Proceedings*. University of Patras, Patras, Greece, July 21-25, 2008. pp. 31-35, ISBN: 978-960-89282-2-0.
- [32] Campadelli P., Casiraghi E., Lombardi G. (2007). Automatic Liver Segmentation from Abdominal CT Scans. In: Cucchiara R. (Eds.). *International Conference on Image Analysis and Processing (ICIAP 2007): Proceedings*. Modena, Italy, September 10-24, 2007. pp. 731-736, IEEE Computer Society Press, Los Alamitos, CA (USA), ISBN: 0769528775, doi: 10.1109/ICIAP.2007.4362863.
- [33] Campadelli P., Casiraghi E., Pratissoli S. (2007). Automatic Segmentation of Abdominal Organs from CT Scans. In: *19th International Conference on Tools with Artificial Intelligence (ICTAI 2007): Proceedings*. Patras, Greece, October 29-31, 2007. vol. 1, pp. 513-516, IEEE Computer Society Press, Los Alamitos, CA (USA), ISBN: 076953015X, doi: 10.1109/ICTAI.2007.62.
- [34] Campadelli P., Casiraghi E. (2007). Liver Segmentation from CT Scans: A Survey. In: F. Masulli, S. Mitra, and G. Pasi (Eds.). *Applications of fuzzy sets theory: 7th International Workshop on Fuzzy Logic and Applications (WILF-CIBB 2007): Proceedings*. Portofino, Italy, July 7-10, 2007. vol. 4578, pp. 520-528, Springer-Verlag Berlin-Hedelberg, ISBN: 978-3-540-73399-7, doi: 10.1007/978-3-540-73400-0-66.
- [35] Casiraghi E., Lombardi G., Pratissoli S., Rizzi S. (2007). 3D α -expansion and Graph Cut Algorithms for Automatic Liver Segmentation from CT Images. In: B. Apolloni, R.J. Howlett, L.C. Jain (Eds.). *Knowledge-Based Intelligent Information and Engineering Systems, 11th International Conference, KES 2007, XVII Italian Workshop on Neural Networks: Proceedings (part I)*. Vietri sul Mare, Italy, September 12-14, 2007. vol. 4692, pp. 421-428, Springer-Verlag Berlin-Heidelberg, ISBN: 978-3-540-74817-5.
- [36] Arca S., Casiraghi E., Lombardi G. (2005). CORNER LOCALIZATION IN CHESSBOARDS FOR CAMERA CALIBRATION. In: *IADAT International Conference on Multimedia, Image Processing and Computer Vision (IADAT-micv 2005): Proceedings*. Madrid, Spain, 2005, ISBN: 8493397156.
- [37] Campadelli P., Casiraghi E. (2005). Lung Field Segmentation in Digital Postero-Anterior Chest Radiographs. In: S. Singh, M. Singh, and C. Apte (Eds.). *International Conference on Advances in Pattern Recognition (ICAPR 2005): Proceedings*. Bath (UK), August 22-25, 2005. vol. 3687, pp. 736-745, Springer-Verlag Berlin-Hedelberg, ISBN: 9783540288336, doi: 10.1007/11552499_81.
- [38] Campadelli P., Casiraghi E., Valentini G. (2005). Lung Nodules Detection and Classification. In: *IEEE International Conference on Image Processing (ICIP 2005): Proceedings*. Genoa, Italy, September 14-19, 2005. vol. 1, pp. 1117-1120, IEEE Computer Society Press, Los Alamitos, CA (USA), ISBN: 0780391357, doi: 10.1109/ICIP.2005.1529951.
- [39] Campadelli P., Casiraghi E. (2004). A Nodule Detection System for Postero-Anterior Chest Radiographs. In: Thi Hoai Han, Pham Dihn Tao (Eds.). *First International Conference on Modelling, Computation and Optimization in information systems and management sciences (MCO 2004): Proceedings*. Metz, France, July 1-3 2004. Hermes Sciences Publishing, London, ISBN: 1903398215.

- [40] Campadelli P., Casiraghi E. (2004). Nodule Detection in Postero Anterior Chest Radiographs. In: C. Barillot, D.R. Haynor, and P. Hellier (Eds.). 7th International conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI 2004): Proceedings. Saint-Malo, France, September 26-29, 2004. vol. 3217, pp. 1048-1049, Springer, ISBN: 9783540229773, doi: 10.1007/978-3-540-30136-3_132.
- [41] Campadelli P., Casiraghi E. (2003). Lung Edge Detection in Postero Anterior Chest Radiographs. In: S. Vitulano (Eds.). Image: e-learning, understanding, information retrieval, medical (Image 2003): Proceedings. Cagliari, Italy, 2003. vol. 15, Series on Software Engineering and Knowledge Engineering, ISBN: 978-981-238-587-1.

National Conference Publications

- [42] Lombardi G., Rozza A., Casiraghi E., Campadelli P. (2012). A Novel Approach for Geometric Clustering based on Tensor Voting Framework. In: B. Apolloni, S. Bassis, A. Esposito, F. Morabito (Eds.). Neural Nets WIRN11: Proceedings of the 21st Italian Workshop on Neural Nets. Vietri sul Mare, Salerno, Italy, June 3-5, 2011. vol. 234, pp. 129-138, IOS Press, 2012, ISBN: 978-1-60750-971-4.
- [43] Rozza A., Arca S., Casiraghi E., Campadelli P., Natale M., Bucci E., Consoli P. (2012). Automatic Alignment of Gel 2D Images. In: B. Apolloni, S. Bassis, A. Esposito, F. Morabito (Eds.). Neural Nets WIRN11: Proceedings of the 21st Italian Workshop on Neural Nets. Vietri sul Mare, Salerno, Italy, June 3-5, 2011. vol. 234, pp. 3-10, IOS Press, 2012, ISBN: 978-1-60750-971-4.
- [44] Campadelli P., Casiraghi E. (2005). Pruning the Nodule Candidate Set in Postero Anterior Chest Radiographs. In: B. Apolloni, M. Marinaro, R. Tagliaferri (Eds.). Biological and Artificial Intelligence Environments: 15th Italian Workshop on Neural Nets, (WIRN Vietri 2004). Vietri sul Mare, Italy, 2004. pp. 37-43, Springer Dordrecht Heidelberg London New York, ISBN: 9789048168637.
- [45] Arca S., Campadelli P., Casiraghi E., Lanzarotti R. (2005). An Automatic Feature Based Face Authentication System. In: B. Apolloni B., Marinaro M., Nicosia G., and Tagliaferri R. (Eds.). Neural Nets: 16th Italian Workshop on Neural Nets (WIRN 2005) and International Workshop on Natural and Artificial Immune Systems (NAIS 2005): Revised Selected Papers. Vietri Sul Mare, Italy, June 8-11, 2005. vol. 3931, pp. 120-126, Springer Berlin, ISBN: 3540331832, doi: 10.1007/11731177_18.
- [46] Campadelli P., Casiraghi E., Columbano S. (2004). Lung Segmentation and Nodule Detection in Postero Anterior Chest Radiographs. In: B. Apolloni B., Marinaro M., Nicosia G., and Tagliaferri R. (Eds.). Proceedings of the second National Conference of Gruppo Italiano Ricercatori in Pattern Recognition (GIRPR 2004), Perugia, September 15-17.
- [47] Casiraghi E., Lanzarotti R., Lipori G. (2003). A Face Detection System based on Color and Support Vector Machines. In: B. Apolloni, M. Marinaro M., R. Tagliaferri (Eds.). Neural Nets: 14th Italian Workshop on Neural Nets (WIRN Vietri 2003): Revised Papers. Vietri sul Mare, Italy, June, 2003. vol. 2859, pp. 113-120, Springer-Verlag Berlin Heidelberg, ISBN: 3-540-20227-7.
- [48] Campadelli P., Casiraghi E., Lanzarotti R. (2002). Detection of Facial Features. In: M. Marinaro, R. Tagliaferri (Eds.). Neural Nets: 13th Italian Workshop on Neural Nets (WIRN Vietri 2002): Revised Papers. Vietri sul mare, Italy, May/June 2002. vol. 2486, pp. 124-131, Springer-Verlag Berlin Heidelberg, ISBN: 3-540-44265-0.

Book Chapters

- [49] Rozza A., Lombardi G., Re M., Casiraghi E., Valentini G., Campadelli P. (2011). A Novel Ensemble Technique for Protein Subcellular Location Prediction. In: O. Okun, G. Valentini, and M. Re (Eds.). Ensembles in Machine Learning Applications. vol. 373/2011, pp. 151-167, Springer-Verlag Berlin Heidelberg, ISBN: 978-3-642-22909-1, doi: 10.1007/978-3-642-22910-7_9.
- [50] Lombardi G., Casiraghi E., Campadelli P. (2010). The Neighbors Voting Algorithm and its Applications. In: O. Okun, G. Valentini. Applications of Supervised and Unsupervised Ensemble Methods. vol. 245/2009, pp. 151-173, Springer-Verlag Berlin Heidelberg, ISBN: 9783642039980, doi: 10.1007/978-3-642-03999-7_9.

Poster Presentations

- [51] Gliozzo J., Perlasca P., Mesiti M., Notaro M., Petrini A., Casiraghi E., M. Frasca, Grossi G., Re M., Paccanaro A., Valentini G. (2018). Patients' networks for clinical phenotype/outcome prediction. Grand BIMS Open Symposium 11th Berlin (Late) Summer Meeting, 2018, Berlin, Germany.
- [52] Gliozzo J., Notaro M., Petrini A., Perlasca P., Mesiti M., Casiraghi E., Grossi G., Re M., Paccanaro A., Valentini G. (2017). Modeling biomolecular profiles in a graph-structured sample space for clinical outcome prediction with melanoma and ovarian cancer patients. 14th Annual Meeting of the Bioinformatics Italian Society (BITS 2017), July 5-7, 2017, Cagliari, Italy.
- [53] Casiraghi E., Vergani B., Villa A. (2017). An automated method for biological marker segmentation, quantification, and colocalization, from histochemical and immunohistochemical images. 14th Annual Meeting of the Bioinformatics Italian Society (BITS 2017), July 5-7, 2017, Cagliari, Italy.
- [54] Casiraghi E., Ferraro S., Franchin M., Villa A., Vergani B., Tozzi M. (2016). Analisi semi automatica nella valutazione della neo-vascolarizzazione della placca carotidea. SICVE 2016, XV Annual Meeting of Societ italiana di Chirurgia Vascolare ed Endovascolare, 22-25 Rome, Italy.
- [55] Rozza A., Lombardi G., Re M., Casiraghi E., Valentini G., Campadelli P. (2011). A novel ensemble approach for the subcellular localization of proteins. In: BITS 2011: 8th annual meeting of the Bioinformatics Italian Society: June 20-22, 2011, Pisa, Italy: Proceedings. Pisa, 2011, p. 105-106, PISA:ETS, ISBN: 9788846730695.

Conference talks and Awards

- [55] The 25th of October 2016 the Abstract/Poster presented at SICVE (entitled: "Analisi semi automatica nella valutazione della neo-vascolarizzazione della placca carotidea.") won the award for being judged the best work presented at the Conference.
- [56] The 16th of February, 2005 she an invited speaker at the Workshop: "Digital Image Processing in medicine and biology" (Palermo), organized by "Centro Interdipartimentale Tecnologie della Conoscenza" (CITC, Università degli Studi di Palermo), "Scuola di specializzazione in Anatomia Patologica" (Università degli Studi di Palermo) and the Department of biotechnologies and Legal Medicine (Università degli Studi di Palermo). She presented her research "Computerized lung nodule detection from Postero-Anterior chest radiographs".
- [57] The 9th of March, 2007 she was an invited speaker at the Workshop: "Biomedical Imaging Systems for diagnosis" (Palermo), organized by "Centro Interdipartimentale Tecnologie della Conoscenza" (CITC, Università degli Studi di Palermo), "Scuola di specializzazione in Anatomia Patologica" (Università degli Studi di Palermo) and the Department of biotechnologies and Legal Medicine (Università degli Studi di Palermo). She presented her research "Computerized liver segmentation method from Computed Tomography (CT) images".
- [58] The 28th-29th of April, 2008 she was an invited speaker at the Workshop: "Shape and Size in Medicine, Biotechnology and Materials Science", organized by the Department of Mathematics, Università degli Studi di Milano. She presented her research "Computer aided diagnosis systems in medical imaging".
- [59] The 30th of November 2006 she participated at "Obiettivo ICT" award, presenting her business idea project, together with Prof. Paola Campadelli. The project was selected as one of the best 10 projects.
- [60] The 26th of October 2007 she participated at "Start Cup Milano Lombardia" award, presenting her research project, together with Prof. Paola Campadelli. The project won the Special award of CCIIA Milano.

Phd Thesis

Elena Casiraghi. A computer aided diagnosis system for lung nodules detection in postero anterior chest radiographs. Phd. Thesis, University of Milan, Computer Science Department, 2004.

Spoken languages

Italian: native language,

English: fluent,

Finnish: basics.

Computer programming languages and operative systems

IDL, MATLAB, C, C++, Java, Go, Python, PASCAL. Windows, UNIX, LINUX.

Milano, April 15, 2019

In fede

Elena Casiraghi

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