

Curriculum Vitae et Studiorum Prof. Roberto Pirrone

Personal data

Pirrone Roberto, born in Palermo on 1966-05-02, living in Via Pignatelli Aragona n. 68, 90141, Palermo. Married, two sons.

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Professional data

Associate Professor of Computer Engineering at the Department of Engineering (DI) - University of Palermo, Italy.

Roberto Pirrone is member of AAAI, IEEE, ACM, CVPL, BICA, AI*IA, AICA, SIREN, SIe-L.

Educational and Professional Career

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| 2020/11/13 | National Scientific Qualification as Full Professor in Computer Engineering (09/H1, ING-INF/05) |
| 2014 - | Associate Professor of Computer Engineering at the Department Engineering - University of Palermo |
| 2007 – 2010 | Secretary of the Board of Directors of the Italian Association for Artificial Intelligence (AI*IA). |
| 2004 - 2014 | Associate Professor of Computer Engineering at the Faculty of Education - University of Palermo. |
| 2003 – 2017 | Member of the Board of Directors of the Italian Association for Artificial Intelligence (AI*IA). |
| 1999 - 2004 | Assistant Professor in Computer Engineering at the Faculty of Education - University of Palermo. |
| 1996 - 1998 | Post-Doc in Electronic and Computer Engineering - University of Palermo. |
| 1992 - 1995 | PhD Student in Computer Engineering – University of Palermo. He gets the PhD title by defending a thesis on “3D Shape Recognition from Images”. |
| June 1991 | Qualifying examination for the licensure in engineering with a grade of 120/120 |
| April 1991 | Master’s degree in Electronic Engineering at the University of Palermo with a grade of 110/110, cum laude, discussing a thesis on neural networks for 3D computer vision. |

Research Interests

Roberto Pirrone is the Head He is the head of the Computer-Human Interaction Laboratory (CHI-Lab) at the DI. The main research interests are in the field of Machine Learning/Deep Learning with application in biomedical data, Computer Vision, and Natural Language Processing. As part of the CHI-Lab activity, smart PACS user interfaces are being developed in support of medical decision-making processes. Finally, Deep Learning architectures are being developed to assess the bioactivity of candidate molecules against Cyclin-Dependent Kinases, whose inhibition is crucial in cancer therapy. Recently, the CHI-Lab joined the COVID19 Task Force managed by CLAIRE (Confederation of Laboratories for Artificial Intelligence Research in Europe). Particularly, the research is on the topic “Bioinformatics (protein and molecular data analysis)” where DNN models are being developed to achieve drug repurposing to contrast the virus.

Roberto Pirrone is member of the Governing Boards of both the National CINI Laboratory on Big Data and the National CINI Laboratory on Digital Health.

International collaborations

- Prof. **Anthony Yezzi**, Georgia Institute of Technology (Georgia Tech): ongoing research on the development of a model for shrinking active contours aimed at segmenting CT/PET volumes.
- The **Division of Drug Design and Medicinal Chemistry** at the Dept. of Pharmaceutical Chemistry, University of Vienna as co-tutor of an Industrial PhD Program in “Machine Learning for Drug Discovery” funded by the Italian Ministry of University and Scientific Research
- Prof. **Stephen Grossberg**, former Head of Department of Cognitive and Neural Systems at Boston University: development of a parallel implementation of Grossberg’s Boundary Contour System (BCS), and theoretical studies about visual saliency in the Adaptive Resonance Theory (ART).
- Prof. **Luc Steels**, Artificial Intelligence Lab alla Vrije Universiteit Brussel, and Dr. **Remi Van Trjip**, Sony Computer Science Laboratories a Parigi: integration of the Fluid Construction Grammar (FCG) in QA systems for Italian language.
- Prof. **Roger Azevedo**, Department of Psychology della North Carolina State University, and Prof. **Gautam Biswas**, School of Engineering della Vanderbilt University: organization of both the 2009 and 2010 AAAI Fall Symposia on “Cognitive and Metacognitive Educational Systems”.

Grants

- OBIND (2020-2022). Grant by PO-FESR Sicilia (PI: Roberto Pirrone). OBIND is aimed at developing a Big Data infrastructure for federating all the main genomic and molecular databases, and providing an integrated Analytics platform in support of the researchers involved in anti-cancer drug research.
- DIGITEMA (2014-2016) “Fruizione DIGItale del patrimonio del TEatro MAssimo di Palermo”, grant n. PAC02L2_00215 from the Italian University Ministry (Avviso D.D. MIUR n. 436 – 2013/03/13), Primary Investigator. Development of an integrated hw/sw platform form multi-channel fruition of digital cultural heritages in the “Teatro Massimo” in Palermo.

- I-TUTOR (2012-2013) “Intelligent Tutoring for Lifelong Learning”, grant n. 519058-LLP-1-2011-1-IT-KA3-KA3MP, from EU LLP, Key Action 3 Multilateral Projects, Head of the UNIPA Research Unit. Design and implementation of a Moodle integrated ITS in support of lifelong learning.
- D3T (2008) Digital Terrestrial Television Team, commission by Bassnet s.r.l. as part of the project n. B01/0291/P, in the PIA Innovazione Program. Development of a platform for delivering e-learning contents over DTT boxes.
- POR Sicilia 2000-2006, Misura 3.14, “Progetto di innovazione tecnologica per la realizzazione di una piattaforma integrata di apprendimento collaborativo in rete”, commission by Castalia s.r.l., 2006. Development of enhanced functionalities for content management in virtual learning environments

Events, program committees, editorial boards

Conferences, summer schools

- International Conference on Biologically Inspired Cognitive Architectures BICA 2012, Program Chair
- 12th International Conference of the AI*IA, Palermo, September 15-17 2011, General Chair
- AAAI Fall Symposium 2010 MCES - Cognitive and Metacognitive Educational Systems, November 11-13 2010, Arlington VA, USA, General Co-Chair
- AAAI Fall Symposium 2009 MCES - Cognitive and Metacognitive Educational Systems, November 11-13 2010, Arlington VA, USA, General Co-Chair
- National School of the Doctorate in Computer Engineering, Palermo, September 17-28 2007, Local Committee
- Summer School “La Visione delle Macchine”, VISMAL 2006, Palermo August 28 – September 1 2006, Local Committee
- European Robotics Symposium - EUROS 2006, Local Committee
- KES 2003, Invited Session “Soft-Computing Techniques for 3D Vision (SC3D)”, Chair
- ICIAP 2001, Palermo, Local Secretariat

Program Committees

- DIDAMATICA 2022
- ICPR 2020
- IJCAI 2020
- IJCAI 2019
- AI*IA 2013, 2015, 2016, 2017, 2018
- BICA 2014
- BICA 2012, Program Chair
- CISIS 2012, Track E-Learning and Groupware Systems
- ICSC 2012, 2013, 2014, 2015, 2016
- AINA 2011, 2017, 2018
- Ec-Web 2009, 2010, Track RECOMMENDER SYSTEMS
- IIHCI 2008, 2009, 2010 presso IEEE ARES/CISIS
- KES 2008, Invited Session Engineered Applications of Semantic Web - SWEA
- IEEE ICADIWT 2008, WS Recommender Systems and Personalized Retrieval

Editorial Boards

- Intelligenza Artificiale - The Int.l Journal of the AI*IA, IOS Press, ISSN 1724-8035, Associate Editor
- Cognitive Systems Research, Elsevier, ISSN 1389-0417, Associate Editor

Reviewer for International Journals

- Artificial Intelligence Journal, Elsevier
- Pattern Recognition, Elsevier
- Pattern Recognition Letters, Elsevier
- IEEE Access
- Learning And Individual Differences, Elsevier
- IET Image Processing
- Int.l Journal of Robotics & Automation, ACTA Press

Teaching

Department of Engineering

- Big Data, Master's degree course in Computer Engineering/Biomedical Engineering
- Web and Mobile Programming, Bachelor's degree course in Computer Engineering
- Medical Imaging Devices, Master's degree course in Biomedical Engineering

Department of Communications

- Digital Communication, Bachelor's degree course in Communications

Management

- 2020 – Department of Engineering Delegate for Informatics
- 2014 – 2019 Vice President of the Board of Teachers of the degree courses in Computer Engineering, University of Palermo
- 2013 – 2015 Rector Delegate for Informatics, University of Palermo
- 2011 – 2014 Member of the Director Board, Department of Chemical, Management, Computer, and Mechanical Engineering, University of Palermo
- 2010 – 2013 Member of the Dean Board, Faculty of Education, University of Palermo
- 2010 – 2013 Dean Delegate for Didactics, Faculty of Education, University of Palermo
- 2006 – Member of the Board of Teachers of the Doctorate in Computer Engineering, University of Palermo

Short List of Publications

1. Gambino, O., Rundo, L., Pirrone, R., & Vitabile, S. (2020). *HCI for biomedical decision-making: From diagnosis to therapy*. Journal of Biomedical Informatics (Editorial). DOI: 10.1016/j.jbi.2020.10359.
2. Bruno, A., Gugliuzza, F., Pirrone, R., & Ardizzone, E. (2020). *A Multi-Scale Colour and Keypoint Density-Based Approach for Visual Saliency Detection*. IEEE Access, 8, 121330-121343. DOI: 10.1109/ACCESS.2020.3006700
3. Mendolia, I, Contino, S., Perricone, U., Ardizzone, E., Pirrone, R. (2020). *Convolutional Architectures for Virtual Screening*. BMC Bioinformatics, vol. 21(8), p. 1-14, DOI: 10.1186/s12859-020-03645-9.
4. Rundo, L., Pirrone, R., Vitabile, S., Sala, E., & Gambino, O. (2020). *Recent advances of HCI in decision-making tasks for optimized clinical workflows and precision medicine*. Journal of Biomedical Informatics, 103479. DOI: 10.1016/j.jbi.2020.103479
5. Bruno, A., Gugliuzza, F., Ardizzone, E., Giunta, C. C., & Pirrone, R. (2019). *Image content enhancement through salient regions segmentation for people with color vision deficiencies*. i-Perception, 10(3), 2041669519841073.
6. Gambino, O., Rundo, L., Cannella, V., Vitabile, S., Pirrone, R. *A framework for data-driven adaptive GUI generation based on DICOM* (2018) Journal of Biomedical Informatics, 88, pp. 37-52. DOI: 10.1016/j.jbi.2018.10.009
7. Stefano A., Vitabile S., Russo G., Ippolito M., Sabini M., Sardina D., Gambino O., Pirrone R., Ardizzone E., Gilardi M. (2017). *An enhanced random walk algorithm for delineation of head and neck cancers in PET studies*. Medical & Biological Engineering & Computing, vol. 55, p. 897-908, ISSN: 0140-0118, doi: 10.1007/s11517-016-1571-0
8. Stefano A., Vitabile S., Russo G., Ippolito M., Marletta F., D'Arrigo C., D'Urso D., Gambino O., Pirrone R., Ardizzone E., Gilardi M. (2016). *A fully automatic method for biological target volume segmentation of brain metastases*. International Journal Of Imaging Systems And Technology, vol. 26, p. 29-37, ISSN: 0899-9457, doi: 10.1002/ima.22154
9. Gambino O., Pirrone R., Di Giorgio F. (2016). *Accessibility of the Italian institutional web pages: a survey on the compliance of the Italian public administration web pages to the Stanca Act and its 22 technical requirements for web accessibility*. Universal Access In The Information Society, p. 305-312, ISSN: 1615-5289, doi: 10.1007/s10209-014-0381-0
10. Stefano A., Vitabile S., Russo G., Marletta F., D'Arrigo C., D'Urso D., Gambino O., Pirrone R. (2015). *An Automatic Method for PET Delineation of Cervical Tumors*. European Journal Of Nuclear Medicine And Molecular Imaging, vol. 42, p. 710-711, ISSN: 1619-7070
11. Gallea R., Ardizzone E., Pirrone R. (2015). *Retargeting framework based on monte-carlo sampling*. In: *Communications*. Communications In Computer And Information Science, vol. 550, p. 287-299, Springer Verlag, ISBN: 9783319251165, ISSN: 1865-0929, doi: 10.1007/978-3-319-25117-2_18

- 12.R. Gallea, E. Ardizzone, R. Pirrone, Physical Metaphor for Streaming Media Retargeting, *IEEE Transactions on Multimedia*, 16(4), 2014, 971-979, ISSN: 1520-9210, DOI: 10.1109/TMM.2014.2305917
- 13.A. Pipitone, V. Cannella, R. Pirrone, Automatic Concept Maps Generation in Support of Educational Processes, *Je-LKS Journal of e-Learning and Knowledge Society*, 10(1), 2014, 85-103, ISSN: 1826-6223.
- 14.E. Ardizzone, R. Pirrone, O. Gambino, S. Vitabile, Illumination Correction on Biomedical Images, *Computing and Informatics*, 33(1), 2014, 175-196, ISSN: 1335-9150.
- 15.V. Cannella, A. Chella, R. Pirrone, A meta-cognitive architecture for planning in uncertain environments, *Biologically Inspired Cognitive Architectures*, 5, 2013, 1-9, ISSN: 2212-683X, DOI: 10.1016/j.bica.2013.06.001.
- 16.R. Gallea, E. Ardizzone, R. Pirrone, O. Gambino, Three-Dimensional Fuzzy Kernel Regression Framework for Registration of Medical Volume Data, *Pattern Recognition*, 46(11), 2013, 3000-3016, ISSN: 0031-3203, DOI: 10.1016/j.patcog.2013.03.025.
- 17.A. Gentile, R. Pirrone, G. Russo, Knowledge Discovery for the Linguistic Atlas of Sicily Project, *International Journal of Computer Systems Science & Engineering*, 25(2), 2010, ISSN: 0267-6192.
- 18.C.A. Bentivoglio, D. Bonura, V. Cannella, S. Carletti, A. Pipitone, R. Pirrone, P.G. Rossi, G. Russo, Intelligent agents supporting user interactions within self regulated learning processes, *Je-LKS Journal of e-Learning and Knowledge Society*, 6(2), 2010, 27-36, ISSN: 1826-6223.
- 19.E. Ardizzone, O. Gambino, A. Genco, R. Pirrone, S. Sorce, Pervasive Access to MRI Bias Artifact Suppression Service on a Grid, *IEEE Transactions on Information Technology in Biomedicine*, 13(1), (2009), 87-93, ISSN: 1089-7771, DOI: 10.1109/TITB.2008.2007108.
- 20.R. Pirrone, G. Russo, V. Cannella, D. Peri, GAIML: A new language for verbal and graphical interaction in chatbots, *Mobile Information Systems*, 4(3), (2008), 195-209, ISSN: 1574-017X.
- 21.E. Ardizzone, R. Pirrone, O. Gambino, Bias artifact suppression on MR volumes, *Computer Methods and Programs in Biomedicine*, 92(1), (2008), 35-53, ISSN: 0169-2607, DOI: 10.1016/j.cmpb.2008.06.005.
- 22.G. Pilato, R. Pirrone, R. Rizzo, A KST-Based System for Student Tutoring, *Applied Artificial Intelligence*, 22(4), (2008), 283-308, ISSN: 0883-9514, DOI: 10.1080/08839510801972785.
- 23.E. Ardizzone, R. Pirrone, O. Gambino, Illumination Correction on MR Images, *Journal of Clinical Monitoring and Computing*, 20(6), (2006), 391-398, ISSN: 1387-1307.
- 24.G. Peri, F. Cappello, F. Farina, F. Palma, F. Ridola, R. De Caro, D. Peri, V. Cannella, R. Pirrone, E. Ardizzone, Automatic induction of rules for computer-aided diagnosis in the multiple sclerosis by analysis of brain MR images, *Clinical Anatomy*, 17, (2004), 163-198, ISSN: 0897-3806.
- 25.E. Ardizzone, R. Pirrone, O. Gambino, Watershed based Detection of Multiple Sclerosis Lesions in MR Images, *WSEAS Transactions on Information Science and Applications*, 1(1), (2004), 252-256.
- 26.Peri, D., Pirrone, R., Ardizzone, E., Gaglio, S., Gerbino, A., Cappello, F., Farina, F., Marciànò, V., Palma, A., Peri, G., Three-dimensional geometrical models of the inguinal region. Towards a

new stereology, *Italian Journal of Anatomy and Embryology*, 108(4), (2003), 223-230, ISSN: 1122-6714.

27. Peri, G., Cappello, F., Palma, A., Farina, F., Peri, D., Pirrone, R., Ardizzone, E., Gaglio, S., Development of software in the study of carotid artery in the neck, *Italian Journal of Anatomy and Embryology*, 106(4), (2001), 273-282, ISSN: 1122-6714.
28. R. Pirrone, Part based Segmentation and Modeling of Range Data by Moving Target, *Journal of Intelligent Systems*, 11(4), (2001), 217-247, ISSN: 0334-1860, DOI: 10.1515/JISYS.2001.11.4.217.
29. F. Alonge, E. Ardizzone, R. Pirrone, Neural Classification of Multiple Sclerosis Lesions in MR Images, *International Journal of Knowledge-Based Intelligent Engineering Systems*, 5(4), (2001), 228-233, ISSN: 1327-2314.
30. A. Chella, S. Gaglio, R. Pirrone, Conceptual representations of actions for autonomous robots, *Robotics and Autonomus Systems*, 34, (2001), 251-263, ISSN: 0921-8890, DOI: 10.1016/S0921-8890(00)00121-4.
31. A. Chella, D. Guarino, I. Infantino, R. Pirrone, A Vision System for Symbolic Interpretation of Dynamic Scenes, *Applied Artificial Intelligence*, 15(8), (2001), 723-734, DOI: 10.1080/088395101317018564.
32. E. Ardizzone, A. Chella, R. Pirrone, F. Sorbello, Recovering 3-D Form Features by a Connectionist Architecture, *Pattern Recognition Letters*, 15, (1994), 77-85, ISSN: 0167-8655, DOI: 10.1016/0167-8655(94)90103-1.

Full list of publications available at [Google Scholar](#)

Palermo, March 15 2021

Roberto Pirrone
