
Marco Porta – Curriculum Vitae

Scientific, Educational and Professional Activity

(January 2024)

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Personal and Contact Information

First name	Marco
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Current position	Full professor (professore ordinario) at the <i>University of Pavia (Università degli Studi di Pavia)</i> , Italy, Department of <i>Electrical, Computer and Biomedical Engineering (Dipartimento di Ingegneria Industriale e dell'Informazione)</i> - Scientific-disciplinary sector ING-INF 05 (<i>Information Processing Systems</i>)
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Academic and Scientific Education

Ph.D. (1999)	<i>Electronic and Computer Engineering (Ingegneria Elettronica e Informatica)</i> , XII cycle, received from the University of Pavia, Department of Computer Engineering and Systems Science (Dipartimento di Informatica e Sistemistica), Computer Vision and Multimedia Laboratory. Final exam taken on December 15 th , 1999, with a thesis entitled <i>Testing New Constructs and Application Domains for Visual Programming Languages, with Special Reference to the Data-Flow Class</i> (supervisor: Prof. Virginio Cantoni).
Master's Degree (1996)	<i>Electronic Engineering (with specialization in Computer Engineering)</i> , received from the Polytechnic of Milan (Italy) on June 18 th , 1996, with a thesis entitled <i>Sistema di interazione multimediale per robot mobile basato sulla metodologia CPP-TRS® (Mobile Robot Multimedia Interaction System Based on the CPP-TRS® Methodology)</i> , supervisor: Prof. Marco Somalvico). State exam, to practice as an electronic/computer engineer, taken in January 1997 (Polytechnic of Milan, Italy).

Academic Positions and Experience

Full professor (Dec. 31 st , 2021 – present)	University of Pavia, Department of Electrical, Computer and Biomedical Engineering, scientific-disciplinary sector ING-INF 05 (<i>Information Processing Systems</i>).
Associate professor (Nov. 15 th , 2014 – Dec. 30 th , 2021)	University of Pavia, Department of Electrical, Computer and Biomedical Engineering, scientific-disciplinary sector ING-INF 05 (<i>Information Processing Systems</i>).
Visiting professor (May 14 th – June 14 th , 2019)	Université Paris-Saclay / Évry Val-d'Essonne, France, Laboratoire IBISC (https://www.ibisc.univ-evry.fr/).
Tenured assistant professor (Dec. 29 th , 2010 – Nov. 14 th , 2014)	University of Pavia, Department of Electrical, Computer and Biomedical Engineering, scientific-disciplinary sector ING-INF 05 (<i>Information Processing Systems</i>).

Researcher within the <i>LivingKnowledge</i> European project (May 2009 – Dec. 2010)	Research contract (University of Pavia) within the <i>LivingKnowledge</i> European project (no. 231126, FP7-ICT-2007-3, https://RJMF/cordis.europa.eu/project/id/231126).
Adjunct professor (“professore a contratto”) (Oct. 2002 – Dec. 2010)	Lectures given at the University of Pavia, within the master’s degrees in <i>Ingegneria Informatica (Computer Engineering)</i> and <i>Management e Tecnologie dell’E-Business (E-Business Management and Technologies)</i> , and within the bachelor’s degree in <i>Comunicazione Interculturale e Multimediale (Intercultural and Multimedia Communication)</i> – see the <i>Teaching Activity</i> section.
FIRB researcher (May 2006 – April 2009)	Three-year research grant at the University of Pavia, within the Italian FIRB project <i>Software and Communication Platforms for High-Performance Collaborative Grid</i> (code RBIN043TKY, https://vision.unipv.it/firb-pvpi/en/).
Research fellow (“assegnista di ricerca”) (Jan. 2002 – Sep. 2002)	Renewal of a research grant (“assegno di ricerca”) for the biennium 2002-2003 (subsequently interrupted, in October 2002, for an adjunct professor appointment).
Research fellow (“assegnista di ricerca”) (Jan. 2000 – Dec. 2001)	Winner of a biennial (2000-2001) research grant (“assegno di ricerca”) for the scientific area <i>Mathematics and Computer, Electrical, Electronic and Mechanical Engineering</i> , University of Pavia. In the same period, winner of a research grant of 20,000,000 Italian Liras for the project <i>Studio e sviluppo di un ambiente multimediale distribuito per la programmazione visuale di applicazioni in ambito Web (Study and development of a distributed multimedia environment for visual programming of Web applications)</i> , within the “young researchers” project of <i>Agenzia 2000</i> (CNR, Italian National Research Council).

Academic and Institutional Roles

Member of PhD academic board (Oct. 2023 – present)	Member of the academic board (“collegio dei docenti”) of the PhD in <i>Scienze e Pratiche della Comunicazione (Communication Sciences and Practices)</i> of the University of Pavia.
President of the CIM-CoD teaching council (Oct. 2021 – present)	President of the teaching council of the interdepartmental programs in <i>Comunicazione, Innovazione, Multimedialità (CIM, Communication, Innovation, Multimedia, bachelor)</i> and <i>Comunicazione Digitale (CoD, Digital Communication, master)</i> of the University of Pavia.
Member of PhD academic board (Oct. 2017 – present)	Member of the academic board (“collegio dei docenti”) of the PhD in <i>Electronics, Computer Science and Electrical Engineering (Ingegneria Elettronica, Informatica ed Elettrica)</i> of the University of Pavia.
Technical representative (Oct. 2019 – Sept. 2023)	Technical representative for <i>Information Technology</i> at the University of Pavia (advisor to the vice-chancellor for <i>IT and External Communication</i>).
Coordinator of the CIM bachelor’s program (Nov. 2014 – Sep. 2021)	Coordinator of the interdepartmental bachelor’s program in <i>Comunicazione, Innovazione, Multimedialità (CIM, Communication, Innovation, Multimedia)</i> of the University of Pavia.

Vice president of the CIM-CPM teaching council
(Nov. 2014 – Sep. 2018)

Vice president of the teaching council of the interdepartmental programs in *Comunicazione, Innovazione, Multimedialità* (CIM, *Communication, Innovation, Multimedia*, bachelor) and *Comunicazione Professionale e Multimedialità* (CPM, *Multimedia and Professional Communication*, master) of the University of Pavia.

Research Interests

The scientific activity of Marco Porta is mainly focused on different aspects of *Eye Tracking*, *Vision-Based Interfaces*, *Visual Communication*, and *Human-Computer Interaction* in general, with increasing attention to the applications of *Artificial Intelligence* and *Machine Perception* for human-centered system design. Specifically, his research work can be summarized by the following macro subjects:

Eye Tracking

Eye Tracking is the ability of special devices to track the user's gaze direction and measure distinguishing eye features. Applications of this technology range from the support to disabled people to the integration of gaze input with ordinary input channels (such as those provided by keyboard and mouse). Moreover, data obtained from the recording of eye movements are very useful for usability studies and biometric applications. The research activity of Marco Porta in the field of Eye Tracking has developed in the following areas:

(1) *Implementation of gaze-based interfaces*. In the context of the integration of eye communication with ordinary user interfaces (articles [J2][J7][C1][C3][C4][C6][C14][C17][C18][C22][B2][B3][B4] in the following list of publications), pointing errors have been faced by means of both automatic and "manual" techniques [B5][C26]. As a support to disabled users, some solutions have been proposed for text entry [J1][J4][J16][C47], web surfing [C7][C40], playing music [C10], e-learning [J24], and the use of ordinary "windows-based" operating environments [J28][B9][C14][C36][C37][C38][C41].

(2) *User behavior analysis for e-learning and "intelligent" e-learning systems*. Research carried out in this area has considered the evaluation of learning (especially in multiple-choice tests [C25][C30]), the analysis of the evolution of eye parameters in response to different kinds of stimuli [J27][J29][C31], and the implementation of e-learning platforms able to monitor and guide the learning process by detecting potential situations in which the user is not correctly understanding something, is experiencing cognitive stress, or is getting tired [C12][C13][C24][C44][C46][C50].

(3) *Gaze-based soft biometrics*. The user's "eye behavior" while freely observing specific kinds of stimuli (e.g., face pictures or animated graphical objects) can be exploited for biometric purposes in both recognition and authentication processes [J5][J17][C5][C8][C9][C23][C27][C29][B1]. In addition, it can be used for forensic applications [J11] and for age and gender estimation [J8][J15][C21].

(4) *Information presentation analysis* for different kinds of interfaces, such as image browsing [J13] and online newspapers [J21][J22][C28][C43].

(5) *Semi-automation of usability evaluation* of user interfaces, through a simplified analysis of quantitative test results [C34].

(6) *Study of eye behavior* in different contexts, such as linguistics [J3], reading [B6], captioning [J23][C42], face recognition [J19], car driving [C2][C13], and evaluation of historical violins [J9].

Vision-Based perceptive Interfaces	<p>Although the WIMP interaction paradigm (based on Windows, Icons, Menus, and Pointing devices) has been very useful for providing a common face to computing, new interaction options are now possible in the direction of “naturalness”. <i>Perceptive interfaces</i> can acquire, by means of proper sensors, information about the user and the surrounding environment. In particular, <i>Vision-Based perceptive Interfaces</i> (VBIs) employ video cameras to implement machine vision [J32]. In addition, or as alternatives, other devices can be exploited, such as ToF (Time of Flight) video cameras or tools similar to the Microsoft Kinect sensor (also used in biometric applications [J10][C19]).</p> <p>Marco Porta has considered the two main kinds of interaction identifiable for VBIs (depending on the active or passive role played by the user), namely <i>explicit</i> and <i>implicit</i> communication [J32]. While in explicit communication users are fully aware that their actions (e.g., gestures [J14][J18][C32][C33][C48][C53]) will be interpreted in a certain way by the computer/machine, in implicit communication users are indirectly “observed” to obtain information on what they are doing or what is happening in the nearby environment; or, also, to get information about their “emotional states”, through the recognition of facial expressions and body movements [J32][C35][C39][C51]. Of course, interfaces based on Eye Tracking are a particular case of perceptive interfaces.</p>
Visual systems for browsing large collections of images	<p>Within the field of <i>Information Visualization</i>, the subclass of <i>Information Presentation</i> is of great interest because of its many application possibilities. The purpose of Information Presentation is to provide the user with a “view” of one or more kinds of elements that are both global and detailed at the same time.</p> <p>Specifically, Marco Porta has considered the problem of browsing large numbers of images. The assumption is that it is very often necessary to examine large collections of pictures to find something, without, however, knowing exactly what (in such cases, neither manually indexed query systems nor “intelligent” databases, automatically searchable based on specific graphic features, can be employed). Different image presentation techniques have been created and tested, most of which based on the RSVP (<i>Rapid Serial Visual Presentation</i>) paradigm [J13][J25][C45][C52][C55].</p>
Visual languages	<p>Unlike textual languages, visual languages can take advantage of the two-dimensional or three-dimensional space. Applied to computer programming, for example, visual languages can be used to create programs that, syntactically and semantically, depend on graphic elements and their spatial arrangement.</p> <p>In particular, Marco Porta has been mainly concerned with the class of Data-Flow languages (graph structures where nodes represent functions and data flow through arcs) [J34][J35][C58][C62][C64][C65][C66][C67][C68][C69][T1] and with languages for querying relational databases [C49][C54].</p>
E-Learning	<p>Constant technological advances offer increasingly flexible training solutions, allowing novel forms of teaching and learning to be devised [C57]. If the quality of content is essential for any kind of teaching [J12][J20][C16][R1], equally important is, in the case of e-learning [C20], the quality of interaction, unfortunately often disregarded. The research of Marco Porta in the field of e-learning has focused on the improvement of interaction, obtained mainly by means of perceptive interfaces. Especially, implicit communication can be particularly effective because it can detect poten-</p>

tially critical “cognitive states”, both through eye parameters [J6][C15][C24][C44][C46][C50] and by means of the analysis of face expressions and user behavior [J29][J30].

Graphical user interfaces, usability, and accessibility

Almost always, using a computer means interacting with visual formalisms. However, some visual systems may lead to interaction models which are counterintuitive and difficult to control. The research of Marco Porta in this area has focused on the development of new interaction paradigms for visual interfaces (with special attention to the Web) [J35][B7][B10][C56][C59][C63][I1][N2][N3], as well as on the identification of usability criteria for their effective design [B8][N1]. Moreover, the interaction with mobile robots [J36] and advanced web query systems has been considered [B10], also in the context of European projects [B7].

Computer Vision

Computer Vision allows machines to exploit cameras to acquire information about the environment in which they operate. Typical uses range from industrial systems to robotics and medical appliances, with recent applications to the field of Human-Computer Interaction. Marco Porta has worked on the development of computer vision techniques for the assessment of distances in monocular vision [B12][C61], vanishing point detection in perspective images [C60], autonomous navigation of vehicles [J31][J33], and multi-resolution representations of images [J26][B11]. In Vision-Based perceptive Interfaces, computer vision problems are related to the observation of users, their actions, and the environment surrounding them.

Publications

International journals

- J1. P. Dondi, S. Sapuppo, M. Porta, *Leyenes: A gaze-based text entry method using linear smooth pursuit and target speed*. International Journal of Human-Computer Studies, April 2024, Vol. 184, 103204, DOI: 10.1016/j.ijhcs.2023.103204.
- J2. P. Dondi, M. Porta, *Gaze-Based Human-Computer Interaction for Museums and Exhibitions: Technologies, Applications and Future Perspectives*. Electronics, 2023, 12(14):3064, DOI: 10.3390/electronics12143064.
- J3. S. Rastelli, M. Porta, *Non-optimal processing of auxiliaries in L2 Italian: An eye-movement and acceptability judgment study*. Zeitschrift für Sprachwissenschaft, 2022, pp. 1-30, DOI: 10.1515/zfs-2022-2007.
- J4. M. Porta, P. Dondi, A. Pianetta, V. Cantoni, *SPEye: A Calibration-Free Gaze-Driven Text Entry Technique Based on Smooth Pursuit*. IEEE Transactions on Human-Machine Systems, Vol. 52, No. 2, 2022, pp. 312-323, DOI: 10.1109/THMS.2021.3123202.
- J5. M. Porta, P. Dondi, N. Zangrandi, L. Lombardi, *Gaze-Based Biometrics From Free Observation of Moving Elements*. IEEE Transactions on Biometrics, Behavior, and Identity Science, Vol. 4, No. 1, 2022, pp. 85-96, DOI: 10.1109/TBIOM.2021.3130798.
- J6. N. Nugrahaningsih, M. Porta, A. Klačnja-Milićević, *Assessing learning styles through eye tracking for e-learning applications*. Computer Science and Information Systems, Vol. 18, No. 4, pp. 1287-1309, 2021, DOI: 10.2298/CSIS201201035N.
- J7. P. Dondi, M. Porta, A. Donvito, G. Volpe, *A gaze-based interactive*

- system to explore artwork imagery*. Journal on Multimodal User Interfaces, 13 pages, 2021, DOI: 10.1007/s12193-021-00373-z.
- J8. V. Cantoni, L. Cascone, M. Nappi, M. Porta, *Demographic classification through pupil analysis*. Image and Vision Computing, Vol. 102, October 2020, 13 pages, DOI: 10.1016/j.imavis.2020.103980.
- J9. P. Dondi, L. Lombardi, M. Porta, T. Rovetta, C. Invernizzi, M. Malagodi, *What do luthiers look at? An eye tracking study on the identification of meaningful areas in historical violins*. Multimedia Tools and Applications, Vol. 78, No. 14, 2019, pp. 19115–19139, DOI: 10.1007/s11042-019-7276-2.
- J10. N. Nugrahaningsih, M. Porta, *Soft biometrics through hand gestures driven by visual stimuli*. ICT Express, Vol. 5, No. 2, 2019, pp. 94-99, DOI: 10.1016/j.icte.2018.04.014.
- J11. V. Cantoni, M. Musci, N. Nugrahaningsih, M. Porta, *Gaze-based biometrics: An introduction to forensic applications*. Pattern Recognition Letters, Vol. 113, 2018, pp. 54-57, DOI: 10.1016/j.patrec.2016.12.006.
- J12. P. Kaczmarek, M. Porta, B. Çiço, N. Frasher, V. Cantoni, L. Wang, F. Vandamme, *Designing a Strategic Framework for European Computing Education and Training*. Scientia Paedagogica Experimentalis, LV, 2, 2018, pp. 101-136.
- J13. M. Porta, S. Ricotti, *Image grid display: A study on automatic scrolling presentation*. Visual Informatics, Vol. 1, No. 1, 2017, pp. 16-24, DOI: 10.1016/j.visinf.2017.01.003.
- J14. M. Porta, *Freehand Interaction with a Paper-Based Input Interface*. International Journal of Computer Applications in Technology, Vol. 54, No. 2, 2016, 106-120, DOI: 10.1504/IJCAT.2016.078759.
- J15. C. Galdi, H. Wechsler, V. Cantoni, M. Porta, M. Nappi, *Towards Demographic Categorization using Gaze Analysis*. Pattern Recognition Letters, Vol. 82, Part 2, 2016, 226-231, DOI: 10.1016/j.patrec.2015.08.018.
- J16. M. Porta, *A Study on Text Entry Methods Based on Eye Gestures*. Journal of Assistive Technologies, Vol. 9, No. 1, 2015, 48-67, DOI: 10.1108/JAT-12-2013-0037.
- J17. V. Cantoni, C. Galdi, M. Nappi, M. Porta, D. Riccio, *GANT: Gaze ANalysis Technique for Human Identification*. Pattern Recognition, Vol. 48, No. 4, 2015, 1027-1038, DOI: 10.1016/j.patcog.2014.02.017.
- J18. P. Dondi, L. Lombardi, M. Porta, *Development of Gesture-Based HCI Applications by Fusion of Depth and Colour Video Streams*. IET Computer Vision, Vol. 8, No. 6, 2014, 568-578, DOI: 10.1049/iet-cvi.2013.0323.
- J19. D. Liccione, S. Moruzzi, F. Rossi, A. Manganaro, M. Porta, N. Nugrahaningsih, V. Caserio, N. Allegri, *Familiarity is not notoriety: phenomenological accounts of face recognition*. Frontiers in Human Neuroscience, 8:672, 2014, DOI: 10.3389/fnhum.2014.00672.
- J20. B. Cico, B. Fetaji, M. Porta, *Review of the Evolution of the Computer Engineering Field and Proposal of a Framework of Recommendations and Guidelines for Designing Computer Engineering Curricula*. International Journal on Information Technologies & Security, Vol. 6, No. 2, 2014.
- J21. M. Porta, A. Ravarelli, F. Spaghi, *Online Newspapers and Ad Banners: An Eye Tracking Study on the Effects of Congruity*. Online Information Review, 2013, Vol. 37, No. 3, 405-423, DOI: 10.1108/OIR-01-2012-0001.

- J22. V. Cantoni, M. Porta, A. Ravarelli, *Applying On-Line Newspaper Design Principles to E-Learning: An Eye Tracking Study Focused on Multimedia*. Journal of Communication and Cognition, 2011, Vol. 44, No. 2, 69-84.
- J23. E. Perego, F. Del Missier, M. Porta, M. Mosconi, *The Cognitive Effectiveness of Subtitle Processing*. Media Psychology, 2010, Vol. 13, No. 3, 243-272, DOI: 10.1080/15213269.2010.502873.
- J24. V. Cantoni, M. Porta, A. Ravarelli, *Eye Tracking Approaches to E-Learning Accessibility*, Journal of Communication and Cognition, vol. 43, Nos. 3-4, 2010, 27-38.
- J25. M. Porta, *New Visualization Modes for Effective Image Presentation*. International Journal of Image and Graphics, Vol. 9, No. 1, Jan. 2009, 27-49, DOI: 10.1142/S0219467809003320.
- J26. P. Gamba, L. Lombardi, M. Porta, *Log-map analysis*. Parallel Computing, Vol. 34, No. 12, 2008, 757-764, DOI: 10.1016/j.parco.2008.09.008.
- J27. M. Porta, *Real-Time Analysis of Eye Behaviour for Enhanced E-Learning*. Journal of Communication and Cognition, Vol. 41, Nos. 1-2, 2008, 41-60.
- J28. M. Porta, *Human-Computer Input and Output Techniques: An Analysis of Current Research and Promising Applications*. Artificial Intelligence Review, Vol. 28, No. 3, 2007, 197-226, DOI: 10.1007/s10462-009-9098-5.
- J29. M. Porta, *E-learning and machine perception: in pursuit of human-like interaction in computer-based teaching systems*. International Journal of Knowledge and Learning, Vol. 3, Nos. 2/3, 2007, 281-298, DOI: 10.1504/IJKL.2007.015556.
- J30. V. Cantoni, M. Cellario, M. Porta, *Perspectives and Challenges in E-Learning: Towards Natural Interaction Paradigms*. Journal of Visual Languages and Computing, 15, 2004, 333-345, DOI: 10.1016/j.jvlc.2003.10.002.
- J31. A. Broggi, M. Cellario, P. Lombardi, M. Porta, *An evolutionary approach to visual sensing for vehicle navigation*. IEEE Transactions on Industrial Electronics - Special Issue on Soft Computing Techniques, Vol. 50, No. 1, February 2003, 18-29, DOI: 10.1109/TIE.2002.807688.
- J32. M. Porta, *Vision-based user interfaces: methods and applications*. International Journal of Human-Computer Studies, 57, 2002, 27-73, DOI: 10.1006/ijhc.2002.1012.
- J33. M. Bertozzi, A. Broggi, M. Cellario, A. Fascioli, P. Lombardi, M. Porta, *Artificial Vision in Road Vehicles*. Proceedings of the IEEE - Special Issue on Visual Perception, Vol. 90, No. 7, July 2002, 1258-1271, DOI: 10.1109/JPROC.2002.801444.
- J34. M. Mosconi, M. Porta, *Iteration Constructs in Data-Flow Visual Programming Languages*. Computer Languages, Vol. 26/2-4, 2001, 67-104, DOI: 10.1016/S0096-0551(01)00009-1.
- J35. M. Mosconi, M. Porta, *Programming Web Applications through a Data-Flow Visual Approach*. Journal of Applied Systems Studies (JASS), Vol. 2, No. 3, 2001.
- J36. M. Porta, *A mobile robot multimedia interaction system based on CPP-TRS® methodology and language*. Ai Communications, Vol. 10, No. 1, March 1997, 71-73.

International
conference
proceedings

- C1. A. Klasnja-Milicevic, M. Ivanovic, M. Porta, *A Gaze-Based Intelligent Textbook Manager*. In: S. C. Mukhopadhyay, S.N.A. Senanayake, P. C. Withana (eds), Proceedings of CITISIA 2022 (7th International Conference on Innovative Technologies in Intelligent Systems and Industrial Applications), online, November 16-18, 2022, pp. 345-355. Lecture Notes in Electrical Engineering, vol 1029, 2023. Springer, Cham.
- C2. R. Crescenti, P. Dondi, M. Porta, C. Resta, G. Rotondo, *An Eye Tracking Based Evaluation Protocol and Method for In-Vehicle Infotainment Systems*. Proceedings of ETFA 2023 (28th IEEE International Conference on Emerging Technologies and Factory Automation), Sinaia, Romania, September 12-15, 2023, pp. 1-4.
- C3. H. N. Le, M. Porta, *A Study on Eye Tracking for Mobile Devices Using Deep Learning*. Proceedings of CompSysTech 2023 (24th International Conference on Computer Systems and Technologies), Ruse, Bulgaria, June 16-17, 2023, pp. 65-69.
- C4. M. Porta, A. Caminiti, P. Dondi, *GazeScale: Towards General Gaze-Based Interaction in Public Places*. Proceedings of ICMI 2022 (24th ACM International Conference on Multimodal Interaction), Bangalore, India, November 7-11, 2022, pp. 591-596.
- C5. M. Porta, *Gaze-Based Biometrics: Some Recent Research*. Proceedings of ICNAE 2022 (1st International Conference on New Approaches in Engineering), Konya, Turkey (online), October 6-7, 2022, pp. 17-22.
- C6. M. Di Maio, P. Dondi, L. Lombardi, Marco Porta, *Hybrid Manual and Gaze-Based Interaction With a Robotic Arm*. Proceedings of ETFA 2021 (26th IEEE Conference on Emerging Technologies and Factory Automation), Västerås, Sweden, September 7-10, 2021, 4 pages.
- C7. M. Casarini, M. Porta, P. Dondi, *A Gaze-Based Web Browser with Multiple Methods for Link Selection*. In Adjunct Proceedings of the Symposium on Eye Tracking Research and Applications (ETRA 2020), Stuttgart, Germany, June 2-5, 2020, 8 pages.
- C8. M. Porta, A. Barboni, *Strengthening Security in Industrial Settings: A Study on Gaze-Based Biometrics through Free Observation of Static Images*. Proceedings of ETFA 2019 (24th IEEE Conference on Emerging Technologies and Factory Automation), Zaragoza, Spain, September 10-13, 2019, pp. 1273-1277.
- C9. V. Cantoni, T. Lacovara, M. Porta, H. Wang, *A Study on Gaze-Controlled PIN Input with Biometric Data Analysis*. Proceedings of CompSysTech'18 (19th International Conference on Computer Systems and Technologies), Ruse, Bulgaria, September 13-14, 2018.
- C10. N. Davanzo, P. Dondi, M. Mosconi, M. Porta, *Playing Music with the Eyes Through an Isomorphic Interface*. Proceedings of COGAIN '18: Workshop on Communication by Gaze Interaction (within ETRA 2018 - 2018 ACM Symposium on Eye Tracking Research & Applications), Warsaw, Poland, June 14-17, 2018, 8 pages.
- C11. V. Cantoni, P. Dondi, L. Lombardi, N. Nugrahaningsih, M. Porta, A. Setti, *A Multi-Sensory Approach to Cultural Heritage: The Battle of Pavia Exhibition*. Proceedings of Florence Heri-Tech 2018, Florence, Italy, May 16-18, 2018.
- C12. M. Ivanović, A. Klasnja-Milićević, J. Ivković, M. Porta, *Integration of Eye Tracking Technologies and Methods in an E-learning System*. Proceedings of the 8th Balkan Conference in Informatics (BCI 2017),

- Skopje, Macedonia, September 20-23, 2017, article no. 29.
- C13. S. Guasconi, M. Porta, C. Resta, C. Rottenbacher, *A Low-Cost Implementation of an Eye Tracking System for Driver's Gaze Analysis*. Proceedings of the 10th International Conference on Human System Interaction (HSI 2017), Ulsan, Republic of Korea, July 17-19, 2017, pp. 264-269.
- C14. M. Porta, *Eye Tracking for Human-Computer Interaction: Challenges and Perspectives* (invited speech). Proceedings of the 4th International Conference on Technology and Sciences (ICAT'Rome 2016), Rome, Italy, November 23-25, 2016, 370-375.
- C15. A. K. Milićević, M. Ivanović, M. Porta, V. Cantoni, *Eye-tracking Techniques and Methods - Important Trends in e-Learning Environments*. Proceedings of the 2016 International Conference on E-Learning, Bratislava, Slovakia, September 8-9, 2016.
- C16. M. Porta, B. Çiço, P. Kaczmarek, N. Frasher, V. Cantoni, F. Vandamme, *New Trends in Information Technologies and their Integration in University Curricula: a Brief Study in the Context of the FETCH European Thematic Network*. Proceedings of the 17th International Conference on Computer Systems and Technologies (CompSysTech 2016), Palermo, Italy, June 23-24, 2016, ACM Press.
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- C18. V. Cantoni, L. Lombardi, M. Porta, Alessandra Setti, *Interactive, Tangible and Multi-Sensory Technology for a Cultural Heritage Exhibition: the Battle of Pavia*. Proceedings of the International Conference on Advanced Computing for Innovation (ACoIn 2015), Sofia, Bulgaria, November 10-11, 2015 (in "Innovative approaches and solutions in advanced intelligent systems", Springer Studies in Computational Intelligence), 77-94.
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- C50. M. Porta, *Eye Tracking for E-Learning: When the Eyes Can Tell a Lot About the User*. Proceedings of the 4th E-Learning Conference, Istanbul, Turkey, 27-28 August 2007.
- C51. M. Porta, *Exploiting Vision and Speech in Advanced E-learning Systems*. Proceedings of the 3rd E-learning Conference, Coimbra, Portugal, 7-8 September, 2006.
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- C57. V. Cantoni, M. Porta, M. G. Semenza, *The E-learning Myth and the New University*. Proceedings of the IMAGE 2003 Workshop, Cagliari, Italy, 9-10 June, 2003.
- C58. M. Mosconi, D. Ottelli, M. Porta, *Alligator, a Web-based Distributed Visual Programming Environment*. Proceedings of the 12th International World Wide Web Conference (WWW2003), Budapest, Hungary, 20-24 May 2003.
- C59. M. Mosconi, M. Porta, F. Zanetti, *Direct Manipulation of Pictorial*

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- C64. M. Porta, *VISPS, a Visual System for Plan Specification.* Proceedings of the 5th Int. Conf. on Advanced Visual Interfaces (AVI 2000), Palermo, Italy, May 24-26, 2000 (ACM Press).
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- C67. E. Ghittori, M. Mosconi, M. Porta, *Designing New Programming Constructs in a Data Flow VL.* Proceedings of the 14th IEEE International Conference on Visual Languages (VL'98), Nova Scotia, Canada, September 1-4, 1998.
- C68. R. Idini, M. Mosconi, M. Porta, *Programming Web-Based Applications within a Data-Flow VL.* Proceedings of 14th IEEE International Conference on Visual Languages (VL'98), Nova Scotia, Canada, September 1-4, 1998.
- C69. M. Mosconi, M. Porta, *A Modular Software Platform for Programming Web Applications.* Proceedings of the First International Workshop on Interaction Agents (IA'98), L'Aquila, Italy, May 24, 1998.
- Book chapters
- B1. V. Cantoni, N. Nugrahaningsih, M. Porta, H. Wang, *Biometric Authentication to Access Controlled Areas Through Eye Tracking.* In M. De Marsico, M. Nappi, H. Proença eds., *Human Recognition in Unconstrained Environments*, 2017, Academic Press-Elsevier, 197-216.
- B2. V. Cantoni, L. Lombardi, M. Porta, A. Setti, *Interfacce utente naturali (Natural user interfaces).* In Cantoni et al. eds., *Pavia, la Battaglia, il Futuro. 1525-2015 Niente fu come prima. CVML e SMART Lab alla Mostra (Pavia, the Battle, the Future. 1525-2015 Nothing was the same again. CVML and SmartLab at the exhibition)*, 2016, Pavia University Press, 9-11.

- B3. L. Merlano, N. Nugrahaningsih, M. Porta, *Interazione oculare (Gaze-based interaction)*. In Cantoni et al. eds., *Pavia, la Battaglia, il Futuro. 1525-2015 Niente fu come prima. CVML e SMART Lab alla Mostra (Pavia, the Battle, the Future. 1525-2015 Nothing was the same again. CVML and SmartLab at the exhibition)*, 2016, Pavia University Press, 13-22.
- B4. V. Cantoni, L. Lombardi, M. Porta, A. Setti, *Conclusioni (Conclusions)*. In Cantoni et al. eds., *Pavia, la Battaglia, il Futuro. 1525-2015 Niente fu come prima. CVML e SMART Lab alla Mostra (Pavia, the Battle, the Future. 1525-2015 Nothing was the same again. CVML and SmartLab at the exhibition)*, 2016, Pavia University Press, 91-96.
- B5. E. De Gaudenzi, M. Porta, *Gaze Input for Ordinary Interfaces: Combining Automatic and Manual Error Correction Techniques to Improve Pointing Precision*. In "Intelligent Systems for Science and Information", Studies in Computational Intelligence 542, L. Chen, S. Kapoor, and R. Bhatia (Eds.), Springer International Publishing Switzerland, 197-212.
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- B8. M. Mosconi, M. Porta, *Accessibility and Usability in the Context of Human-Computer Interaction*. In "Eye tracking in audiovisual translation", E. Perego (Ed.), Aracne Editrice, Roma, 2012, 105-133.
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- B11. L. Lombardi, M. Porta, *Logmap analysis*. In "Visual Attention Mechanisms", V. Cantoni, M. Marinaro and A. Petrosino, eds., New York: Kluwer Academic/Plenum Publishers, 2002.
- B12. A. Barili, A. Biancardi, V. Cantoni, L. Lombardi, M. Porta, *Exploitation of Monocular Vision*. In "Enabling Technologies for the PRASSI Autonomous Robot", Sergio Taraglio and Vincenzo Nanni Eds., December 2001, ENEA.
- National conference proceedings N1. S. Favalli, F. Ceravolo, M. Ceron, A. Facchinetti, G. Melis, V. Pampanin, M. Porta, B. Rabai, C. Ricci, F. Scervini, *Realising social inclusion for persons with disabilities and delivering effective science communication through sustainable ICT solutions: a case study from the University of Pavia*. Conferenza "GARR 2021 - Sostenibile/Digitale" (selected papers), 7-16 giugno 2021, online.

- N2. M. Mosconi, M. Porta, F. Zanetti, *Shelves and Cart: un nuovo modello d'interazione per i siti di commercio elettronico basato sul paradigma drag&drop*. VII congresso nazionale "L'ergonomia nella società dell'informazione", Firenze, 26-28 settembre 2001.
- N3. M. Porta, *Agenti elementari come approccio ad una astrazione modulare di comportamenti complessi nelle interfacce intelligenti*. Workshop "Dialogo e Modelli di Utente nelle Interfacce Intelligenti", Padova, settembre 1998.
- International reports R1. M. Porta, B. Çiço, P. Kaczmarski, *Report on Work Package 3, Deliverable 3.3, 'European Strategic Framework for Computing Education and Training 2020' (ESFCET 2020) – ERASMUS Thematic Network 'Future Education and Training in Computing: How to Support Learning at Anytime Anywhere (FETCH)'*. January 2016, ISBN 978-88-98567-21-8.
- Italian journals I1. M. Porta, *Sistema di Interazione Multimediale per robot mobile basato sulla metodologia CPP-TRS®*. AI*IA Notizie (magazine of the Italian Association for Artificial Intelligence), N. 4, 1996.
- Theses T1. M. Porta, *Testing New Constructs and Application Domains for Visual Programming Languages, with Special Reference to the Data-Flow Class*. Ph.D. thesis, Ph.D. in Ingegneria Elettronica e Informatica (Electronic and Computer Engineering), Department of Computer Engineering and Systems Science, University of Pavia (XII cycle), December 15th, 1999, supervisor: Prof. Virginio Cantoni.
- T2. M. Porta, *Sistema di interazione multimediale per robot mobile basato sulla metodologia CPP-TRS® (Mobile robot multimedia interaction system based on CPP-TRS® methodology)*. Master's thesis, Department of Elettronica e Informazione, Polytechnic of Milan, June 18th, 1996, supervisor: Prof. Marco Somalvico.

Relevant Roles in Associations and Technical Committees

- IEEE IES Technical Committee on Factory Automation (January 2022 – present) Vice chair of the IEEE Industrial Electronics Society Technical Committee on *Factory Automation* (<https://tcfa.ieee-ies.org/chairs.html>).
- Subcommittee of the IEEE IES Technical Committee on Factory Automation (November 2014 – present) Co-chair (since February 2019) and chair (from November 2014 to January 2019) of the Subcommittee on *Computer Vision and Human-Machine Interaction in Industrial and Factory Automation* of the IEEE Industrial Electronics Society, Technical Committee on *Factory Automation* (<https://tcfa.ieee-ies.org/structure.html>).
- COGAIN Association (Jan. 2018 – Jan. 2023) President (from Jan. 2021 to Jan. 2023) of the *COGAIN Association* (COmmunication by GAze INteraction, <https://www.cogain.org/board/>) and member of the association's board (from 2018 to 2020), as vice president (2019-2020) and portal editor (2018).

IEEE IES Technical Committee on Factory Automation (Oct. 2018 – Dec. 2021) Secretary of the IEEE Industrial Electronics Society Technical Committee on *Factory Automation* (<https://tcfa.ieee-ies.org/chairs.html>).

Participation in Editorial Boards and Guest Editorships

Journal of Imaging (September 2020 – present) Member of the Editorial Board (<https://www.mdpi.com/journal/jimaging/editors>).

IEEE Industrial Electronics Magazine (January 2020 – present) Member of the Editorial Board (<http://www.ieee-ies.org/pubs/industrial-electronics-magazine/199-editorial-board>).

Scientia Paedagogica Experimentalis (March 2018 – present) Member of the Editorial Board (<https://www.lotuswebtec.com/en/journals/scientia-paedagogica-experimentalis-spe.html>).

Advances in Human-Computer Interaction (April 2016 – present) Member of the Editorial Board (<https://www.hindawi.com/journals/ahci/editors/>).

Sensors (January – October 2021) Guest editor, special issue on *Eye Tracking Techniques, Applications, and Challenges* (https://www.mdpi.com/journal/sensors/special_issues/Eye_Tracking_TAC).

Chairman and Organizational Roles at Conferences and Workshops

IEEE IECON 2024 Track co-chair at IECON 2024, 50th Annual Conference of the IEEE Industrial Electronics Society (technical area *Communication for Industrial and Factory Automation*, Chicago, IL, USA, November 3-6, 2024, <https://www.iecon-2024.org/technical-track-chairs>).

IEEE ETFA 2024 and 2023 Special session co-chair at ETFA, IEEE International Conference on *Emerging Technologies and Factory Automation*: 29th edition (Padova, Italy, September 10-13, 2024, <https://2024.ieee-etfa.org/>) and 28th edition (Sinaia, Romania, September 12-15, 2023, <https://2023.ieee-etfa.org/>).

IEEE ISIE 2024, 2023, and 2022 Track co-chair at ISIE, IEEE International Symposium on *Industrial Electronics*: 33rd edition (Ulsan, South Korea, June 18-21, 2024, track *Industrial Informatics: Cloud Computing, Big Data, AI, Informatics and Software Engineering*, <https://iee-isie-2024.org/>), 32nd edition (Helsinki, Finland, June 19-21, 2023, track *Industrial Informatics: Cloud Computing, Big Data, AI, Informatics and Software Engineering*, <https://2023.ieee-isie.org/>) and 31st edition (Anchorage, Alaska, USA, June 1-3, 2022, track *Signal and Image Processing*, <https://www.ieee-isie2022.org/>).

- IEEE WFCS 2023 and 2022 Program committee co-chair of WFCS, IEEE International Conference on *Factory Communication Systems*: 19th edition (Pavia, Italy, April 26-28, 2023, <https://wfcs23.unipv.it/>) and 18th edition (online, April 27-29, 2022, <https://wfcs22.unipv.it/>).
- IEEE ETFA 2022 General co-chair of ETFA 2022, 27th IEEE International Conference on *Emerging Technologies and Factory Automation* (Stuttgart, Germany, September 6-9, 2022, <https://2022.ieee-etfa.org/>).
- IEEE ICIT 2022 Co-chair of the track *Cloud Computing, Big Data, and Software Engineering* at ICIT 2022, 23rd IEEE International Conference on *Industrial Technology* (Shanghai, China, March 28-31, 2022, <https://2022.ieee-icit.org/technical-tracks/>).
- IEEE ETFA 2021 Program committee co-chair of ETFA 2021, 26th IEEE International Conference on *Emerging Technologies and Factory Automation* (Västerås, Sweden, September 7-10, 2021, <https://2021.ieee-etfa.org/>).
- IEEE INDIN 2021 Co-chair of Track 8 (*Human, Computer and Machine Interaction*) at INDIN 2021, 19th IEEE International Conference on *Industrial Informatics* (Palma de Mallorca, Spain, July 21-23, 2021, https://2021.ieee-indin.org/technical-technical_tracks/tt-08-human-computer-and-machine-interaction/).
- ETTAC 2020 Co-organizer and co-chair of ETTAC 2020, 1st Workshop on *Eye Tracking Techniques, Applications and Challenges* (January 10, 2021, <https://vision.unipv.it/ettac2020/organization.html>), in conjunction with ICPR 2020, 25th International Conference on *Pattern Recognition*, Milan, Italy, January 10-15, 2021).
- COGAIN 2020 General co-chair of COGAIN 2020, Symposium on *COmmunication by GAze INteraction* (held online, June 26th, 2020, <http://cogain2020.cogain.org/> – originally planned in Stuttgart, Germany, co-located with ETRA 2020, the ACM Symposium on *Eye Tracking Research & Applications*).
- IEEE ETFA 2020, 2019, and 2018 Co-chair of Track 6 at ETFA, IEEE International Conference on *Emerging Technologies and Factory Automation*: 25th edition (track *Computer Vision and Human-Machine Interaction in Industrial and Factory Automation*, Vienna, Austria, September 8-11, 2020, <https://2020.ieee-etfa.org/technical-tracks/computer-vision-and-human-machine-interaction-in-industrial-and-factory-automation/>), 24th edition (track *Computer Vision and Human-Machine Interaction in Industrial and Factory Automation*, Zaragoza, Spain, September 10-13, 2019, <http://www.etfa2019.org/track-6-computer-vision-human-machine-interaction-in-industrial-and-factory-automation/>), and 23rd edition (track *Computer Vision, Computational Intelligence, and Modern Heuristics in Automation*, Torino, Italy, September 4-7, 2018).
- COGAIN 2018 Program committee co-chair of COGAIN 2018, Symposium on *COmmunication by GAze INteraction* (Warsaw, Poland, June 14-17, 2018, <http://cogain2018.cogain.org/>, co-located with ETRA 2018, the ACM Symposium on *Eye Tracking Research & Applications*).

- IEEE INDIN 2017, 2016, and 2015 Co-organizer of special sessions at INDIN, IEEE International Conference on *Industrial Informatics*: 15th edition (session *Industry 4.0: Keeping Humans in the Loop and in Control*, Emdem, Germany, July 24-26, 2017, <https://web.archive.org/web/20171207205327/http://indin2017.i2ar.de/special-sessions.html>), 14th edition (session *Vision-Based Systems for Danger Detection*, Poitiers, France, July 18-21, 2016, https://iee-indin2016.sciencesconf.org/conference/iee-indin2016/pages/SST_11.pdf), and 13th edition (session *Human Sensing for Industrial Applications*, Cambridge, United Kingdom, July 22-24, 2015).
- IEEE ICIT 2017 Co-organizer of the special session *Human Factors and System Design in Factory Automation* at ICIT 2017, 18th IEEE International Conference on *Industrial Technologies* (Toronto, Canada, March 22-25, 2017, <https://icit2017.org/special-session-tracks/>).
- IEEE HSI 2010 and 2009 Co-chair of the track *Telemedicine and e-Health* at HSI, IEEE International Conference on *Human System Interaction*: 3rd edition (Rzeszow, Poland, May 13-15, 2010) and 2nd edition (Catania, Italy, May 21-23, 2009).
- HCI 2005 Organizer and chair of the special session *Vision-Based Perceptive Interfaces for PC Interaction* at HCI 2005, 11th International Conference on *Human-Computer Interaction* (Las Vegas, Nevada, USA, July 22-27, 2005).

Participation in Program Committees of Conferences and Workshops

- WAIM 2024, within CISTI 2024 6th Workshop on *Artificial Intelligence and Management* (WAIM), within the 19th *Iberian Conference on Information Systems and Technologies* (CISTI, Salamanca, Spain, June 25-28, 2024).
- CSDT 2024, within CIIDS 2024 Special Session on *Cyber Science in Digital Transformation* (CSDT, <https://aciids.pwr.edu.pl/2024/session.php?acronym=CSDT>), within the 16th *Asian Conference on Intelligent Information and Database Systems* (CIIDS, Al Khaimah, UAE, April 15-18, 2024).
- ACM ETRA 2024, 2023, 2022, 2021, 2020, and 2019 ACM Symposium on *Eye Tracking Research and Applications*: 16th edition (Glasgow, UK, June 4-7, 2024, <https://etra.acm.org/2024/>), 15th edition (Tübingen, Germany, May 30 - June 2, 2023), 14th edition (Seattle, WA, USA, June 8-11, 2022, <https://etra.acm.org/2022/>), 13th edition (Stuttgart, Germany, May 24-27, 2021, <https://etra.acm.org/2021/ipcs.html>), 12th edition (Stuttgart, Germany, June 2-5, <https://etra.acm.org/2020/ipcs.html>), and 11th edition (Denver, Colorado, USA, June 25-28, 2019, <https://etra.acm.org/2019/areachairs.html>).
- IEEE WFCS 2024 and 2021 IEEE International Conference on *Factory Communication Systems*: 20th edition (Toulouse, France, April 17-19, 2024, <https://wfcs24.inviteo.fr/en/committees/13>) and 17th edition (Linz, Austria, June 9-11, 2021, <https://konferenzen.jku.at/wfcs2021/content/committees>).

- ICT4AgeingWell 2024, 2023, 2022, 2021, 2020, 2019, 2018, 2017, 2016, and 2015
- International Conference on *Information and Communication Technologies for Ageing Well and e-Health*: 10th edition (Angers, France, April 28-30, 2024, <https://ict4awe.scitevents.org/ProgramCommittee.aspx?y=2024>), 9th edition (Prague, Czech Republic, April 22-24, 2023, <https://ict4awe.scitevents.org/ProgramCommittee.aspx?y=2023>), 8th edition (online, April 23-25, 2022, <https://ict4awe.scitevents.org/ProgramCommittee.aspx?y=2022>), 7th edition (online, April 24-26, 2021, <https://ict4awe.scitevents.org/ProgramCommittee.aspx?y=2021>), 6th edition (online, May 3-5, 2020, <https://ict4awe.scitevents.org/ProgramCommittee.aspx?y=2020>), 5th edition (Heraklion, Crete, Greece, May 2-4, 2019, <https://ict4awe.scitevents.org/ProgramCommittee.aspx?y=2019>), 4th edition (Funchal, Madeira, Portugal, March 22-23, 2018), 3rd edition (Porto, Portugal, March 28-29, 2017), 2nd edition (Rome, April 21-22, 2016), and 1st edition (Lisbon, Portugal, May 20-22, 2015).
- CompSysTech 2024, 2023, 2022, 2021, 2020, 2019, 2018, 2017, 2016, 2015, 2014, 2013, 2012, and 2011
- International Conference on *Computer Systems and Technologies*: 25th edition (Ruse, Bulgaria, June 14-15, 2024, <http://www.compsystech.org/index.php?cmd=dPage&pid=pc>), 24th edition (Ruse, Bulgaria, June 16-17, 2023), 23rd edition (Ruse, Bulgaria, June 17-18, 2022), 22nd edition (Ruse, Bulgaria, June 18-19, 2021), 21st edition (Ruse, Bulgaria, June 19-20, 2020), 20th edition (Ruse, Bulgaria, June 21-22, 2019), 19th edition (Ruse, Bulgaria, September 13-14, 2018), 18th edition (Ruse, Bulgaria, June 23-24, 2017), 17th edition (Palermo, Italy, June 23-24, 2016), 16th edition (Dublin, Ireland, June 25-26, 2015), 15th edition (Ruse, Bulgaria, June 26-27, 2014), 14th edition (Ruse, Bulgaria, June 28-29, 2013), 13th edition (Ruse, Bulgaria, June 22-23, 2012), and 12th edition (Vienna, Austria, June 16-17, 2011).
- EMDPA 2023 and 2022, within KES 2023 and 2022
- Special Session on *Eye Movement Data Processing and Analysis* (EMDPA) within the International Conference on *Knowledge-Based and Intelligent Information & Engineering Systems* (KES): 7th edition, within the 27th edition of (KES, Athens, Greece, September 6-8, 2023) and 6th edition, within the 26th edition of KES (Verona, Italy, September 7-9, 2022).
- ACS/IEEE AICCSA 2023, 2022, 2021, 2020, and 2019
- ACS/IEEE International Conference on *Computer Systems and Applications* (track *Multimedia, Computer Vision and Image Processing*): 20th edition (Giza, Egypt, December 4-7, 2023, <https://aiccsa.net/AICCSA2023/tracks-and-subtopics/track6/>), 19th edition (Abu Dhabi, UAE, December 5-7, 2022, <https://www.aiccsa.net/AICCSA2022/index.php/tracks-and-subtopics/13-tracks/33-track-6>), 18th edition (Tangier, Morocco, November 30 - December 3, 2021), 17th edition (Antalya, Turkey, November 2-5, 2020, <http://aiccsa.net/AICCSA2020/13-tracks/34-track-7>), and 16th edition (Abu Dhabi, UAE, November 3-7, 2019, <http://www.aiccsa.net/AICCSA2019/13-tracks/34-track-7>).
- ICT Innovations 2023, 2022, 2021, 2020, 2019, 2018, and 2017
- International Conference on *ICT Innovations*: 15th edition (Ohrid, North Macedonia, September 24-26, 2023, <http://ictinnovations.org/committees>), 14th edition (Skopje, North Macedonia, September 29 - October 1, 2022), 13th edition (online, September 27-29, 2021), 12th edition (online, September 24-26, 2020), 11th edition (Ohrid, Republic of Macedonia, October 17-19, 2019), 10th edition (Ohrid, Republic of Macedonia, September 17-19, 2018), and 9th edition (Skopje, Republic of Macedonia, September 18-23, 2017).

- CHIItaly 2023, 2021, 2019, 2017, and 2015 Biannual Conference of the *Italian ACM SIGCHI Chapter*: 15th edition (Turin, Italy, September 20-23, 2023, <https://sigchitaly.eu/en/chitaly-2023/>), 14th edition (Bozen, Italy, Hult 11-13, 2021), 13th edition (Padua, September 23-25, 2019), 12th edition (Cagliari, September 18-20, 2017), and 11th edition (Rome, Italy, September 28-30, 2015).
- ICAT 2023, 2022, 2020, 2019, 2018, 2017, 2016, 2015, and 2014 International Conference on *Advanced Technologies*: 11th edition (Istanbul, Turkey, August 17-19, 2023), 10th edition (Van, Turkey, November 25-27, 2022), 9th edition (Istanbul, Turkey, August 10-12, 2020), 8th edition (Sarajevo, Bosnia and Herzegovina, August 26-30, 2019), 7th edition (Antalya, Turkey, April 28 – May 1, 2018), 6th edition (Riga, Latvia, September 12-15, 2017), 5th edition (Istanbul, Turkey, May 9-12, 2017), 4th edition (Rome, Italy, November 23-25, 2016 – also invited speaker), 3rd edition (Konya, Turkey, September 1-3, 2016), 2nd edition (Antalya, Turkey, August 4-7, 2015), and 1st edition (Antalya, Turkey, August 12-15, 2014).
- FedCSIS 2023, 2022, 2021, 2020, 2019, 2018, 2017, 2016, 2015, 2014, 2013, 2012, and 2011 Federated Conference on *Computer Science and Information Systems*, Track 1 (*Advances in Artificial Intelligence and Applications*): 18th edition (Warsaw, Poland, September 17-20, 2023, <https://2023.fedcsis.org/pc>), 17th edition (Sofia, Bulgaria, September 4-7, <https://fedcsis.org/2022/aaia/committee>), 16th edition (online, <https://fedcsis.org/2021/aaia/committee>), 15th edition (online, <https://fedcsis.org/2020/aaia/committee>), 14th edition (Leipzig, Germany, September 1-4, 2019, <https://www.fedcsis.org/2019/aaia/committee>), 13th edition (Poznań, Poland, September 9-12, 2018), 12th edition (Prague, Czech Republic, September 3-6, 2017), 11th edition (Gdansk, Poland, September 11-14, 2016), 10th edition (Lodz, Poland, September 13-16, 2015), 9th edition (Warsaw, Poland, September 7-10, 2014), 8th edition (Krakow, Poland, September 8-11, 2013), 7th edition (Wroclaw, Poland, September 9-12, 2012), and 6th edition (Szczecin, Poland, September 18-21, 2011).
- ICPR 2022 and 2021 International Conference on *Pattern Recognition*: 26th edition (Montréal, Québec, Canada, August 21-25, 2022, <https://www.icpr2022.com/>) and 25th edition (Milan, Italy, January 10-15, 2021, virtual, <https://www.micc.unifi.it/icpr2020/>).
- IEEE ICIT 2021 22nd IEEE International Conference on *Industrial Informatics* (Valencia, Spain, March 10-12, 2021, <https://ieee-icit2021.org/committees/>).
- MIRA 2019 and 2018 Workshop on *Multimedia Information Retrieval and Applications*: 15th edition (Sorrento, Italy, November 26-29, 2019, <http://www.sitis-conf.org/en/mira-2019.php>) and 14th edition (Las Palmas De Gran Canaria, Spain, November 26-29, 2018, <http://www.sitis-conf.org/en/mira-2018.php>).
- IW-BAAS 2017 1st International Workshop on *Biometrics as a Service* (Catania, September 12th, 2017, <http://www.bioplub.unisa.it/iwbaas/organizers.php>).
- IEB 2015 2nd Workshop on *Insight on Eye Biometrics* (within SITIS 2015, 11th International Conference on *Signal Image Technology & Internet Systems*, Bangkok, Thailand, November 23-27, 2015, <http://www.sitis-conf.org/past-conferences/www.sitis-conf.org-2015/en/ieb-2015.php.html>).
- BIOMET 2014 International Workshop on *Biometrics* (Sofia, Bulgaria, June 23-25, 2014, <https://vision.unipv.it/SOFIA-2014/>).

Scientific Responsibilities in Research Projects and Thematic Networks

HiEdTec (2018-2022)	Leader of work packages 2 (<i>Developing Concepts of the adaptation of the education system to the Digital Generation considering the specific conditions of each of the Partner Countries</i>) and 3 (<i>Development of Centres for innovative educational technologies and active learning classrooms, selecting virtual classroom software; Development of Handbook of Innovative Educational Technologies</i>) within the HiEdTec Erasmus+ European Project (<i>Modernization of Higher Education in Central Asia through New Technologies</i> , https://hiedtec.ecs.uni-ruse.bg/).
Enhancing E-Learning with Advanced Human-Computer Interaction Facilities (2016-2018)	Italian leader of the project <i>Enhancing E-Learning with Advanced Human-Computer Interaction Facilities</i> (Executive Programme for Scientific and Technological Cooperation between the Italian Republic and the Republic of Serbia RS16MO09, http://www.esteri.it/mae/resource/doc/2015/11/pe_italia_serbia_2016_18-firmato.pdf).
ETN-FETCH (2013-2016)	Leader of Work Package 3 (<i>European Strategic Framework for Computing Education and Training 2020</i>) within the FETCH European Thematic Network (<i>Future Education and Training in Computing: How to Support Learning at Anytime Anywhere</i> , 539461-LLP-1-2013-1-BG-ERASMUS-ENW, http://fetch.ecs.uni-ruse.bg).

Participation in Research Projects and Thematic Networks

CARIPLO (2020-2024)	National project <i>RISID (Realizing the rIght to Social Inclusion for persons with Disabilities through new tools of smart communication and sharing knowledge: from international to local effectiveness)</i> , financed by Fondazione CARIPLO (https://risid2020.wordpress.com/).
PRIN (2017-2020)	National PRIN project <i>COSMOS (COntractlesS Multibiometric mObile System in the wild)</i> .
LivingKnowledge (2009 – 2012)	<i>LivingKnowledge – Facts, Opinions and Bias in Time</i> , European project (Seventh Framework Programme, Grant agreement ID 231126, Call for proposal FP7-ICT-2007-3, https://cordis.europa.eu/project/id/231126).
ETN-TRICE (2008-2011)	European thematic network <i>TRICE (Teaching, Research, Innovation in Computing Education)</i> , Socrates-Erasmus program, http://trice.ecs.uni-ruse.bg/?cmd=gsInsC&cid=IT).
PRIN (2007-2009)	National PRIN project <i>Ambienti intelligenti: interpretazione di eventi, riconfigurabilità sensoriale e interfacce multimodali (Ambient Intelligence: event analysis, sensor reconfiguration and multimodal interfaces)</i> .
FIRB (2006-2008)	National FIRB project <i>Infrastrutture e piattaforme real-time per ambienti di ricerca e e-learning collaborativo (Software and communication platforms for high-performance collaborative grid)</i> , code RBIN043TKY, https://vision.unipv.it/firb-popi/en/).

eYES (2006-2007)	International project <i>Creation of an e-learning interface for the blind and the visually impaired</i> – eYes (Leonardo da Vinci EU program, code I/06/B/F/PP-154229).
ETN-DEC (2004-2007)	European thematic network DEC (<i>Doctoral Education in Computing</i> , Socrates-Erasmus program, http://ecet.ecs.uni-ruse.bg/etndec/index.php?command=insideCountry&country=it).
PRIN (2005-2006)	National PRIN project <i>Metodologie di data mining per le applicazioni di e-business</i> (Data Mining methods for e-business applications).
ETN-ECET (2001-2004)	European thematic network ECET (<i>European Computing Education and Training</i> , Socrates-Erasmus program, http://ecet.ecs.uni-ruse.bg/ecet/index.php?command=insideCountry&country=it).

Responsibility for Scientific Studies Commissioned by Private or Public Entities

Confindustria Pavia (Feb. – Dec. 2019)	Research contract <i>Occhio all'Arte!</i> (Look at the art!) between the Department of Electrical, Computer and Biomedical Engineering of the University of Pavia and <i>Confindustria Pavia</i> (Italian Industrial Federation, Pavia branch, with MY SMART S.r.l.) – within the <i>Protolab</i> project.
Neosperience Lab (Jul. – Sep. 2016)	Research contract between the Department of Electrical, Computer and Biomedical Engineering of the University of Pavia and <i>Neosperience Lab S.r.l.</i> , aimed at the implementation of a semi-autonomous system for conducting eye tracking experiments and analyzing the results.
Wind Telecomunicazioni (Jul. – Aug. 2011)	Research contract between the Department of Electrical, Computer and Biomedical Engineering of the University of Pavia and <i>Wind Telecomunicazioni S.p.A.</i> , to carry out usability studies (based on eye tracking) on the company's website.
Vodafone Italia (Feb. – Mar. 2011)	Research contract between the Department of Electrical, Computer and Biomedical Engineering of the University of Pavia and <i>Vodafone Italia S.p.A.</i> , aimed at the development of tools for the management of focus groups related to the <i>Smart-Charging</i> project.

Membership in Professional/Scientific Organizations

ACM	Association for Computing Machinery (https://www.acm.org/).
ACM SIGCHI	ACM Special Interest Group on Computer-Human Interaction (https://sigchi.org/).
ACM SIGCHI Italy	Italian section of ACM SIGCHI (https://sigchitaly.eu/).
COGAIN	COmmunication by GAze INter-action (https://www.cogain.org , president from January 2021 to January 2023).
CVPL	Italian association for research in Computer Vision, Pattern recognition and machine Learning (former GIRPR, https://www.cvpl.it/).

IEEE	Institute of Electrical and Electronics Engineers (https://www.ieee.org/), senior member.
IEEE CS	IEEE Computer Society (https://www.computer.org/).
IEEE IES	IEEE Industrial Electronics Society (https://www.ieee-ies.org/).
IEEE SMC	IEEE Systems, Man, and Cybernetics Society (https://www.ieeesmc.org/).

Peer Review Activities

International journals (since 2007 only)	<i>Image and Vision Computing</i> (2023 and 2018), <i>IEEE Transactions on Learning Technologies</i> (2022), <i>Scientia Paedagogica Experimentalis</i> (2022), <i>Multimedia Tools and Applications</i> (2022, 2019, 2018, 2016, and 2015), <i>IEEE Transactions on Industrial Informatics</i> (2022, 2021, 2018, 2017, 2016, 2014, and 2013), <i>IEEE Transactions on Human-Machine Systems</i> (2022, 2017, 2014, and 2013), <i>IEEE Transactions on Intelligent Transportation Systems</i> (2021), <i>Applied Soft Computing Journal</i> (2021), <i>Pattern Recognition</i> (2021), <i>Sensors</i> (2021), <i>Pattern Recognition Letters</i> (2021, 2018, and 2015), <i>Behaviour & Information Technology</i> (2020), <i>Cognitive Processing</i> (2020), <i>Scientific Reports</i> (2020), <i>IEEE Transactions on Biometrics, Behavior, and Identity</i> (2020 and 2018), <i>IEEE Access</i> (2020, 2019, 2018, and 2017), <i>International Journal of Technology and Human Interaction</i> (2020, 2018, 2017, 2016, 2015, 2014, and 2013), <i>Computers and Electrical Engineering</i> (2019), <i>Journal of Enabling Technologies</i> (2019), <i>Electronics Letters</i> (2019), <i>International Journal of Human-Computer Studies</i> (2019, 2015, 2014, 2013, and 2011), <i>Computer Science and Information Systems</i> (2018), <i>International Journal of Learning and Change</i> (2018), <i>ACM Transactions on Applied Perception</i> (2017), <i>Interacting with Computers</i> (2017), <i>International Journal of Human-Computer Interaction</i> (2017, 2016, and 2015), <i>IEEE Transactions on Emerging Topics in Computing</i> (2017 and 2015), <i>International Journal of Artificial Intelligence in Education</i> (2016), <i>IEEE Transactions on Parallel and Distributed Systems</i> (2016), <i>Microprocessors and Microsystems</i> (2016), <i>Online Information Review</i> (2016), <i>ACM Transactions on Computer Human Interaction</i> (2015), <i>Universal Access in the Information Society</i> (2015), <i>IEEE Transactions on Systems, Man, and Cybernetics - Part A</i> (2015, 2013, and 2012), <i>Journal of Visual Languages and Computing</i> (2015, 2013, 2012, 2011, 2010, and 2009), <i>International Journal of Pattern Recognition and Artificial Intelligence</i> (2014), <i>Information Visualization</i> (2012), <i>Advances in Engineering Software</i> (2011), <i>IEEE Transactions on Industrial Electronics</i> (2009, 2008, and 2007), <i>ACM Transactions on Software Engineering and Methodology</i> (2007).
Intern. conferences (since 2005 only)	ETRA 2024, 2023, 2021, 2020, 2019, 2018, and 2016 (<i>International Symposium on Eye Tracking Research and Applications</i>), KES 2023 and 2021 (<i>International Conference on Knowledge-Based and Intelligent Information & Engineering Systems</i>), ETFA 2023 and 2020 (<i>IEEE International Conference on Emerging Technologies and Factory Automation</i>), ICPS 2023 and 2020 (<i>IEEE International Conference on Industrial Cyber-Physical Systems</i>), AICCSA 2023, 2022, 2021, 2020, and 2019 (<i>ACS/IEEE International Conference on Computer Systems and Applications</i>), ISIE 2023, 2022, and 2017 (<i>IEEE International Symposium on Industrial Electronics</i>), ICT4AgeingWell 2023, 2022, 2021, 2020, 2019, 2018, 2017, 2016, and 2015 (<i>International</i>

Conference on Information and Communication Technologies for Ageing Well and e-Health), CHIItaly 2023, 2021, 2019, 2017, and 2015 (*Biannual Conference of the Italian SIGCHI Chapter*), ICT Innovations 2023, 2022, 2021, 2020, 2019, 2018, 2017, and 2015 (*International Conference on ICT Innovations*), CompSysTech 2023, 2022, 2021, 2020, 2019, 2018, 2017, 2016, 2015, 2014, 2013, 2012, and 2011 (*International Conference on Computer Systems and Technologies*), FedCSIS 2023, 2022, 2021, 2020, 2019, 2018, 2017, 2016, 2015, 2014, 2013, 2012, and 2011 (*Federated Conference on Computer Science and Information Systems*), IECON 2022 and 2017 (*IEEE Conference on Industrial Electronics*), ICPR 2022, 2020, 2008, and 2006 (*IAPR-IEEE International Conference on Pattern Recognition*), WFCS 2021 (*IEEE International Conference on Factory Communication Systems*), ICIT 2021 and 2017 (*IEEE International Conference on Industrial Technology*), IESSES 2020 (*IEEE International Conference on Industrial Electronics for Sustainable Energy Systems*), ETWEB 2020 and 2019 (*Eye Tracking for the WEB workshop, within ETRA 2020 and 2019*), INDIN 2020, 2019, 2018, and 2017 (*IEEE International Conference on Industrial Informatics*), ECEM 2019, 2017, 2015, and 2013 (*European Conference on Eye Movements*), MIRA 2018 (*Workshop on Multimedia Information Retrieval and Applications, within SITIS 2018, 14th International Conference on Signal Image Technology & Internet Based Systems*), PSIVT 2017 (*Pacific-Rim Symposium on Image and Video Technology*), E-Learning 2016, 2015, and 2014 (*International Conference on E-Learning*), ICAT 2016 and 2014 (*International Conference on Advanced Technology & Science*), IEB 2015 (*Workshop on Insight on Eye Biometrics*), ICTRC 2015 (*International Conference on Information and Communication Technology Research*), EDUCON 2015, 2014, 2013, and 2012 (*IEEE Global Engineering Education Conference*), BIOMET 2014 (*International Workshop on Biometrics*), IJCB 2014 (*International Joint Conference on Biometrics*), EUROMICRO DSD/SEAA 2014 (*Euromicro Conference on Software Engineering and Advanced Applications*), TALE 2014, 2013, and 2012 (*IEEE International Conference on Teaching, Assessment and Learning for Engineering*), CHI 2012, and 2010 (*ACM Conference on Human Factors in Computing Systems*), HSI 2011, 2010 and 2009 (*IEEE International Conference on Human System Interaction*), UIST 2010 (*ACM Symposium on User Interface Software and Technology*), ICIAP 2009, 2007, and 2005 (*IEEE International Conference on Image Analysis and Processing*).

Supervised Research Fellows and PhD Students

Supervisor of research fellow (Univ. of Pavia)

- Dr. Piercarlo Dondi (*Human-Computer Interaction for Cultural Heritage, "assegno di ricerca"*, from September 2019 to May 2021).

Supervisor of PhD students (Univ. of Pavia)

- Hoàng Nam Lê (XXXIX cycle, *Artificial Intelligence and Machine Perception for Human-Centered System Design*, started on October 1st, 2023).
- Iman Abu Hashish (XXXII cycle, *Applied Data Science Approaches in FinTech: Innovative Models for Bitcoin Price Dynamics*, final exam taken in February 2020 – co-supervised with Prof. Tullio Facchinetti).

- Nahumi Nugrahaningsih (XXVII cycle, *Eye Behavior and Body Motion Analysis for Biometrics and E-Learning*, final exam taken in February 2017).
 - Calet Jimenez Perez (XXVI cycle, unfinished).
 - Stefania Ricotti (XXVI cycle, *Eye Tracking for Usability and E-Learning: Case Studies and Research Perspectives*, final exam taken in December 2014).
- Co-supervisor of PhD student (Univ. of Pavia)
- Alice Ravarelli (XXIV cycle, *User Interface Evaluation through Eye Tracking: New Approaches and Critical Issues*, final exam taken in December 2011 – co-supervised with Prof. Virginio Cantoni).

Teaching Activity

<p>Web and Multimedia Technologies (from AY 2019-20 to AY 2023-24 – 5 years)</p>	<p>Tenured lecturer (6 ECTS, in English), master’s degree in <i>Computer Engineering</i>, University of Pavia.</p>
<p>Web Design and Technologies (from AY 2011-12 to AY 2023-24 – 13 years)</p>	<p>Tenured lecturer (9 ECTS), interdepartmental bachelor’s degree in <i>Comunicazione, Innovazione, Multimedialità (CIM, Communication, Innovation, Multimedia)</i>, University of Pavia.</p>
<p>Eye Tracking Technologies and Applications (March 21st, 2023, March 10th, 2022, February 5th, 2019, March 9th, 2018, and March 10th, 2017 – 5 years)</p>	<p>Three hours per year, Post Bachelor Programmes in <i>Design and Development of Vehicle Dynamics</i> and in <i>Race Engineering</i> (University of Pavia, Automotive Safety Center, and Quattroruote Academy).</p>
<p>Multimedia Systems and Technologies (from AY 2012-13 to AY 2018-19 – 7 years)</p>	<p>Tenured lecturer (6 ECTS, in English), master’s degree in <i>Computer Engineering</i>, University of Pavia.</p>
<p>Progettare soluzioni di comunicazione (Design of communication solutions) (from AY 2011-12 to AY 2014-15 – 4 years)</p>	<p>Lecturer (28, 32, 36 and 48 hours, respectively), IFTS course (Istruzione e Formazione Tecnica Superiore) <i>Tecnico superiore per la comunicazione e il multimedia (High technician in communication and multimedia)</i>, Fondazione “Le Vele”, Pavia.</p>
<p>User Experience Design - Web and Mobile (May 10th and 11th, 2013)</p>	<p>Lecturer (12 hours), postgraduate Master in <i>Sviluppo Applicazioni Web, Mobile e Social Media (Development of Web, Mobile and Social Media Applications)</i>, MEDALics - Centro di Ricerca per le Relazioni Mediterranee (https://www.medalics.org/).</p>
<p>Sistemi e Tecnologie Multimediali (Multimedia Systems and Technologies) (AY 2011-12)</p>	<p>Tenured lecturer (6 ECTS), master's degrees in <i>Ingegneria Informatica (Computer Engineering)</i> and <i>Bioingegneria (Bioengineering)</i>, University of Pavia.</p>

- Human-Machine Interface (October 2012 and May 2010) Lecturer (8 hours per year), for CINI (Consorzio Interuniversitario Nazionale per l'Informatica), at *Selex Sistemi Integrati*, Rome, Italy.
- Media digitali, Reti di calcolatori e World Wide Web (Digital Media, Computer Networks and World Wide Web) (January-February 2012, 2011, 2010 and 2009) Lecturer (9 hours per year), postgraduate Master in *Management Multimediale (Multimedia Management)*, Campus Multimedia In.Formazione, Mediaset-IULM.
- Sistemi e Tecnologie Multimediali (Multimedia Systems and Technologies) (AY 2010-11) Lecturer (6 ECTS), master's degrees in *Ingegneria Informatica (Computer Engineering)*, *Bioingegneria (Bioengineering)* and *Ingegneria dei Servizi (Service Engineering)*, University of Pavia.
- Web Design and Technologies (AY 2010-11) Lecturer (9 ECTS), interfaculty bachelor's degree in *Comunicazione, Innovazione, Multimedialità (CIM, Communication, Innovation, Multimedia)*, University of Pavia.
- Sistemi e Tecnologie Multimediali (Multimedia Systems and Technologies) (from AY 2003-04 to AY 2009-10 – 7 years) Lecturer (5 ECTS), master's degree in *Ingegneria Informatica (Computer Engineering)* and interfaculty master's degree in *Management e Tecnologie dell'E-Business (E-Business Management and Technologies)*, University of Pavia.
- Sistemi e Tecnologie Multimediali – Mod. A (Multimedia Systems and Technologies - Part A) (from AY 2002-03 to AY 2009-10 – 8 years) Lecturer (5 ECTS), interfaculty bachelor's degree in *Comunicazione Interculturale e Multimediale (CIM, Intercultural and Multimedia Communication)*, University of Pavia.
- Sistemi e Tecnologie Multimediali – Mod. B (Multimedia Systems and Technologies - Part B) (from AY 2002-03 to AY 2009-10 – 8 years) Lecturer (5 ECTS), interfaculty bachelor's degree in *Comunicazione Interculturale e Multimediale (CIM, Intercultural and Multimedia Communication)*, University of Pavia.
- Sistemi Web e Tecnologie Multimediali (Web Systems and Multimedia Technologies) (October 2007) Lecturer (16 hours), post lauream course on *Attività di Gestione della Filiera Produttiva nelle PMI (Management of the supply chain in SMEs)*, Polo Pavese dell'ICT per la logistica integrata e sostenibile, Pavia.
- ECDL (European Computer Driving Licence) (January – July 2007) Lecturer (57 hours in total, several editions) for the Emilia Romagna Italian Region, organized by Opera Multimedia S.p.A., about *Basic ICT concepts, Internet and email, Excel basics and Excel advanced topics*.

<p>Accessibilità per i Siti Web (Web Accessibility) (Sep. 2005 – Apr. 2007)</p>	<p>Lecturer (149 hours in total, several editions) for the Emilia Romagna Italian Region, course organized by the <i>Centro Interdipartimentale di Studi e Ricerche sulla Disabilità (Interdepartmental Center for Studies and Researches on Disability)</i> of the University of Pavia and Opera Multimedia S.p.A., structured into an initial informative workshop (2 hours, 1 edition), a module on guidelines for building and managing accessible websites (7 hours, 12 editions), and a module on advanced design techniques for the creation of accessible web pages (10.5 hours, 6 editions).</p>
<p>Human-Computer Interaction (from AY 2002-03 to AY 2006-07 – 5 years)</p>	<p>Lecturer (25 hours per year), International postgraduate Master in <i>Media Science and Technology</i> (Tunis, Tunisia), collaboration between the University of Tunis and the Istituto Universitario di Studi Superiori of Pavia (IUSS), http://media-tunis.unipv.it/ (note: the name of the course changed from the initial <i>Human-Computer Interface</i> to the successive <i>Man-Machine Interface</i> and <i>Human-Computer Interaction</i>, without, however, substantial variations in content).</p>
<p>Laboratorio di Editoria Multimediale (Laboratory of Multimedia Publishing) (AY 2004-05)</p>	<p>Lecturer (20 hours) within the course <i>Editoria On-Line e Off-Line (Online and Offline Publishing)</i>, Prof. Angela Lanzi, interfaculty master's degree in <i>Editoria e Comunicazione Multimediale (ECM, Multimedia Communication and Publishing)</i>, University of Pavia.</p>
<p>Interazione Uomo-Macchina (Human-Computer Interaction) (from AY 2002-03 to AY 2004-05 – 3 years)</p>	<p>Lecturer (40 hours per year), International postgraduate Master in <i>Scienza e Tecnologia dei Media (Media Science and Technology)</i>, Istituto Universitario di Studi Superiori (IUSS), Pavia.</p>
<p>Elaborazione Digitale dell'Informazione (Digital Information Processing) (from AY 2002-03 to AY 2003-04 – 2 years)</p>	<p>Lecturer (15 hours per year), International postgraduate Master in <i>Scienza e Tecnologia dei Media (Media Science and Technology)</i>, Istituto Universitario di Studi Superiori (IUSS), Pavia.</p>
<p>Introduzione alla Programmazione dei Calcolatori (Introduction to Computer Programming) (from AY 2001-02 to AY 2002-03 – 2 years)</p>	<p>Lecturer (30 hours per year) within the course <i>Informatica grafica (Basic Computer Graphics)</i>, Prof. Mauro Mosconi, Faculty of Engineering, master's degree in <i>Ingegneria Edile e Architettura (Engineering and Architecture)</i>, University of Pavia.</p>
<p>Forme di Interazione per il Web (Forms of Interaction for the Web) (AY 2001-02)</p>	<p>Lecturer (9 hours), International postgraduate Master in <i>Scienza e Tecnologia dei Media (Media Science and Technology)</i>, Istituto Universitario di Studi Superiori (IUSS), Pavia.</p>
<p>Introduzione agli Strumenti Multimediali (Introduction to Multimedia Tools) (from AY 2000-01 to AY 2001-02 – 2 years)</p>	<p>Lecturer (12 hours per year) within the course <i>Comunicazione Digitale e Multimediale – Modulo A (Digital and Multimedia Communication - Part A)</i>, Prof. Stefano Levialdi, several faculties and degree programs, University of Pavia.</p>

Elaborazione d'immagine (Image Processing) (from AY 1999-2000 to AY 2001-02 – 3 years)	Lectures and support to laboratory activities (about 25 hours per year), within the course <i>Teoria e Tecnica di Elaborazione dell'Immagine (Computer Vision)</i> , Prof. Virginio Cantoni, Faculty of Engineering, master's degree in <i>Ingegneria Informatica (Computer Engineering)</i> , University of Pavia.
Stili CSS e pagine dinamiche per il Web (Cascading Styles Sheets and dynamic web pages) (from AY 1998-99 to AY 2001-02 – 4 years)	Lecturer (about 15 hours per year) within the course <i>World Wide Web - Progetto e Tecnologie (World Wide Web - Design and Technologies)</i> , Prof. Mauro Mosconi, International postgraduate Master in <i>Scienza e Tecnologia dei Media (Media Science and Technology)</i> , Istituto Universitario di Studi Superiori (IUSS), Pavia.
Programmazione orientata agli oggetti e linguaggio Java (Object-oriented programming and Java language) (from AY 1998-99 to AY 2000-01 – 3 years)	Lecturer (about 40 hours per year) within the course <i>Linguaggi e Traduttori (Languages and Compilers)</i> , Prof. Mauro Mosconi, Faculty of Engineering, master's degree in <i>Ingegneria Informatica (Computer Engineering)</i> , University of Pavia.

Seminars

Usabilità e Accessibilità del Web (Web Usability and Accessibility) (from October 2015 to November 2023, 9 years)	University of Pavia (2 hours per year), within the course <i>Metodologie e tecniche per l'impresa digitale (Methodologies and techniques for the digital enterprise)</i> , master's degree in <i>Economia e gestione delle imprese (Economics and Business Management)</i> , Department of Economics and Management.
Web, Multimedia e Interazione Uomo-Macchina (Web, Multimedia and Human-Computer Interaction) (from June 2008 to June 2023, 16 years)	University of Pavia (4 hours per year, for high school students) – title from 2008 to 2018: <i>Internet e Multimedialità (Internet and Multimedia)</i> .
Le Tecnologie della Sharing Economy (Technologies of Sharing Economy) (April 2021, May 2020, and April 2019, 3 years)	University of Pavia (2 hours per year), within the course <i>Sharing Economy</i> , interdepartmental bachelor's degree in <i>Comunicazione, Innovazione, Multimedialità (CIM, Communication, Innovation, Multimedia)</i> .
Eye Tracking Technologies and Applications (June 3 rd , 2019)	Université Paris-Saclay/Évry Val-d'Essonne (France), Laboratoire IBISC (1 hour).
L'analisi dei movimenti oculari - eye-tracking - nella ricerca sull'acquisizione della seconda lingua (Analysis of eye movements - eye tracking -	University of Pavia-IUSS (1 hour), within the series <i>La ricerca sperimentale sul linguaggio: acquisizione, uso, perdita (Experimental research on language: acquisition, use, loss)</i> .

in second language
acquisition research)
(June 19th, 2012)

La legalità nello spazio
virtuale dei nuovi media
(Legality in the virtual
space of new media)
(March 22nd, 2012)

Casa Circondariale “Torre del Gallo” of Pavia (2 hours), within the series *Legalità e Codici Comunicativi: una riflessione a più voci* (Legality and Communicative Codes: a multifaceted reflection, <https://www.controcampus.it/2012/03/legalita-e-codici-comunicativi-seminari-al-carcere-di-pavia/>).

Eye Tracking for Explicit
and Implicit Human-
Computer Communication
(May 28th, 2009)

University of Lugano (Switzerland), Faculty of Informatics (2 hours, <https://www.inf.usi.ch/en/feeds/8947>).

Visione Artificiale e
Interfacce Uomo-Macchina
(Computer Vision and
Human-Computer
Interfaces)
(December 10th, 2001)

Collegio Ghislieri of Pavia (1.5 hours), within the series *Le immagini digitali: visione artificiale e nuovi media* (Digital Imaging: Computer Vision and New Media).

E-Learning Courses

Definition of questions
for the EUCIP Core
Level exam, area B.4
(January 2009, July 2004)

- 1) Definition of 33 official questions (with answers and comments) for the EUCIP (European Certification of Informatics Professionals) international certification, area B.4 (*User Interface and Web Design*), January 2009.
- 2) Definition of 16 official questions (with answers and comments) for the EUCIP international certification, area B.4 (*User Interface and Web Design*), July 2004.

Creation of educational
material for "EUCIP Core
Level", area B.4
(Oct. 2004 – Apr. 2005)

Course promoted by CINI (*Consorzio Interuniversitario Nazionale per l'Informatica*) for the EUCIP (European Certification of Informatics Professionals) international certification - Development of educational material for the area B.4, *User Interface and Web Design* (17 learning objects, 103 content units, 112 figures, 105 questions, 21 exercises).

Supervised Theses

Including the graduation sessions of December 2023, Marco Porta has been supervisor of 385 master's and bachelor's theses at the University of Pavia (the complete list is available at <https://vision.unipv.it/grad-thesis.html>).

In particular:

Master's degree in
Computer Engineering (former
Ingegneria Informatica, now in
English)

39 theses

Master's degree in <i>Industrial Automation Engineering</i>	2 theses
Master's degree in <i>Ingegneria Informatica (Computer Engineering)</i>	35 theses
Master's degree in <i>Ingegneria dei Servizi (Service Engineering)</i>	1 thesis
Interfaculty master's degree in <i>Management e Tecnologie dell'E-Business (E-Business Management and Technologies)</i>	6 theses
Master's degree in <i>Ingegneria Informatica (Computer Engineering, old five-year program)</i>	2 theses
Interdepartmental master's degree in <i>Comunicazione Digitale (CoD, Digital Communication)</i>	1 thesis
Interdepartmental master's degree in <i>Comunicazione Professionale e Multimedialità (CPM, Professional Communication and Multimedia)</i>	17 theses
Interfaculty master's degree in <i>Editoria e Comunicazione Multimediale (ECM, Multimedia Communication and Publishing)</i>	17 theses
Bachelor's degree in <i>Ingegneria Elettronica e Informatica (Electronic and Computer Engineering)</i>	8 theses
Bachelor's degree in <i>Ingegneria Informatica (Computer Engineering)</i>	5 theses
Bachelor's degree in <i>Ingegneria Elettronica (Electronic Engineering)</i>	3 theses
Interdepartmental bachelor's degree in <i>Comunicazione, Innovazione, Multimedialità (CIM, Communication, Innovation, Multimedia)</i>	148 theses
Interfaculty bachelor's degree in <i>Comunicazione Interculturale e Multimediale (CIM, Intercultural and Multimedia Communication)</i>	91 theses
ERASMUS students	10 theses

Awards and Recognitions

- Paper [J21] (M. Porta, A. Ravarelli, F. Spaghi, *Online Newspapers and Ad Banners: An Eye Tracking Study on the Effects of Congruity*, *Online Information Review*, 2013, Vol. 37, No. 3) was selected by the “Journal’s Editorial Team” as the *Outstanding Paper* of 2013.
- Paper [C28] (V. Cantoni, M. Porta, S. Ricotti, F. Zanin, *Banner Positioning in the Masthead Area of Online Newspapers: An Eye Tracking Study*, *Proceedings of the 14th International Conference on Computer Systems and Technologies - CompSysTech 2013 - Ruse, Bulgaria, June 28-29, 2013*) received the *Best Paper Award* for the session *Image Processing and Computer Vision*.
- Paper [C30] (V. Cantoni, C. Jimenez Perez, M. Porta, S. Ricotti, *Exploiting Eye Tracking in Advanced E-Learning Systems*, *Proceedings of the 13th International Conference on Computer Systems and Technologies - CompSysTech 2012 - Ruse, Bulgaria, June 22-23, 2012*) received the *Best Paper Award* for the session *Educational Aspects*.
- Paper [J30] (V. Cantoni, M. Cellario, M. Porta, *Perspectives and Challenges in E-Learning: Towards Natural Interaction Paradigms*, *Journal of Visual Languages and Computing*, 15, 2004) was one of the ten most downloaded articles of the journal from 2004 to 2014.
- Paper [J32] (M. Porta, *Vision-based user interfaces: methods and applications*, *International Journal of Human-Computer Studies*, 57, 2002) was judged “of exceptional merit” by the journal’s editor (and published through a “fast-track” procedure).

Other Activities

<p>Evaluation of research project (May – Nov. 2023)</p>	<p>Ongoing evaluation and monitoring of a project within the framework of the <i>Industrial Research and Experimental Development, Programmazione Nazionale per la Ricerca</i> (PNR) 2015-2020, Italian Ministry of University and Research.</p>
<p>Development of websites for the University of Pavia (2011 – 2022)</p>	<p>Website of the <i>Dipartimento di Ingegneria Industriale e dell’Informazione</i> (<i>Electrical, Computer and Biomedical Engineering</i>, current and previous version), former website of the bachelor's degree in <i>Ingegneria Elettronica e Informatica</i> (<i>Electronic and Computer Engineering</i>), former website of the master's degrees in <i>Electronic Engineering</i>, <i>Computer Engineering</i> and <i>Industrial Automation Engineering</i>, and former “promotional” website of the Engineering master’s degrees.</p>
<p>Evaluation of research projects (Sep. – Dec. 2018)</p>	<p>Evaluation of AIM (<i>Attraction and International Mobility</i>) projects, <i>Research and Innovation National Operational Program</i> (PON) 2014-2020, Italian Ministry of Education, University and Research.</p>
<p>Evaluation of research project (June 2018)</p>	<p>Research and Training project (art. 12 DM 593/2000, Emilia Romagna region call), intermediate evaluation, Italian Ministry of Education, University and Research.</p>
<p>Evaluation of research projects (April – May 2018)</p>	<p>Evaluation of <i>Industrial Research and Experimental Development</i> projects, <i>Programmazione Nazionale per la Ricerca</i> (PNR) 2015-2020, Italian Ministry of Education, University and Research.</p>

Competence Center on Media Science and Technology (2009 – 2013)	Participation in the activities of the <i>Centro di Competenza in Scienza e Tecnologia dei Media</i> (Competence Center on Media Science and Technology) of the University of Pavia, aimed at developing research projects in collaboration with companies and organizations operating in the media field, to promote innovative solutions and technology transfer.
Consultancy for Vodafone Italia (Mar. 2010 – Jun. 2012)	Usability studies based on eye tracking for websites and administrative interfaces; design of a system for semiautomatic analysis of usability based on eye tracking.
E-Learning feasibility study (Sep. – Dec. 2003)	Member of the <i>Gruppo di lavoro eLearning</i> (eLearning working group) of CINI (Consorzio Interuniversitario Nazionale per l'Informatica) to carry out a feasibility study for a system able to collect, classify, and supply e-learning content, commissioned by CNIPA (Centro Nazionale per l'Informatica nella Pubblica Amministrazione).
CRIMTA (2001 – 2005)	Member of the scientific committee of CRIMTA, <i>Centro di Ricerca Interdipartimentale Multimediale sul Teatro Antico</i> (Multimedia Interdepartmental Research Center on Ancient Theatre), University of Pavia.