

GIBALDI Agostino

Via Sant'Orsola 27, Modena (MO) ITALY
Phone: +39 340 8233807 (Italy)

agostino.gibaldi@gmail.com
Date of birth: 19/07/1978

CURRICULUM VITAE

Education and Training

- PhD in Electronic Engineering, Information Technology, Robotics and Telecommunications, University of Genova, 15/04/2011. Thesis title: *Foveation from stereo or stereo from foveation? A neural architecture on active vision systems.*
- Degree in Biomedical Engineering, grades 102/110 (Bachelor + Master degree), University of Genova, 04/05/2007. Thesis title: *Receptive fields for the heading direction from parallax motion.*
- High school degree, grades 52/60, Liceo Scientifico Statale G.Marconi, 1998.

Work Experience

- Assistant Professor (RTDa) (Aug 2024 - present). Università di Modena e Reggio, Via Vivarelli, 10, 41125 Modena, Italy.
- Contractor as Human Vision Scientist (Jan 2023 - present). Field of research: *Quantifying visual experience.* Magic Leap, 7500 W Sunrise Blvd, Plantation, FL 33322
- Lead Human Vision Scientist (May 2021 – Dec 2022). Field of research: *Quantifying visual experience.* Magic Leap, 7500 W Sunrise Blvd, Plantation, FL 33322
- Assistant Project Scientist (June 2017 – May 2021). Field of research: *Statistics of natural disparity and advanced display technologies.* School of Optometry - University of California at Berkeley, Berkeley, CA, USA.
- Post-Doc Researcher (October 2016 – June 2017). Field of research: *Statistics of natural disparity and advanced display technologies.* School of Optometry - University of California at Berkeley, Berkeley, CA, USA.
- Post-Doc Research Fellowship (October 2014 – September 2016). Field of research: *Neuromorphic systems for sensorimotor coordination and multimodal integration in peripersonal space.* Informatics, Bioengineering, Robotics, and System Engineering Department - University of Genova, Via All'Opera Pia 13 - Genova Italy.
- Post-Doc Research Fellowship (March 2013 – March 2014). Field of research: *Automatic Analysis of Image Sequences from Computer Tomography through Voxel-oriented Perfusional Study.* Advanced Research Center on Electronic Systems for Information and Communication Technologies E. De Castro (ARCES), University of Bologna, Via Toffano, 2 - 40125 Bologna - Italy.
- Post-Doc Research Fellowship (March 2011 – February 2013). Field of research: *Visuo-motor interactions for the representation of the three-dimensional space: adaptive control of saccade and vergence movements.* Biophysical and Electronic Engineering Department - University of Genova - 16145 Genova Italy.
- PhD Research Fellowship (January 2008 - December 2010), Biophysical and Electronic Engineering Department - University of Genova, Via All'Opera Pia 11a - 16145 Genova Italy.

Consulting

- Jan 2023 – Dec 2025, Northeastern University, 360 Huntington Ave, Boston, MA 02115, Stati Uniti
Subject Matter Expert: custom eye tracking calibration and analysis
- May 2020 – May 2021. SeaTec Consulting Inc. Aviation/Aerospace, Bellevue, WA, USA.
Subject Matter Expert: *analysis of tanker aircraft stereoscopic remote camera/vision system for teleoperation*
- May – Sep 2014. Circle Garage Start-Up Innovativa s.r.l. Piazza Colombo 2/13 - 16121 Genova, Italy.
Subject Matter Expert: *sensor fusion and pattern recognition for human body motion detection and analysis.*

Teaching Activities

Assistant Professor at the Department of Engineering "Enzo Ferrari", University of Modena and Reggio

- Biological Signals (MsC, 2024-2026)
- Sensors and measurement systems for bio-industries (MsC, 2024-2026)

Graduate teacher assistant at the Biophysical and Electronic Engineering Department - University of Genova:

- Foundations of biomedical data and signals elaboration (MsC, 2015-2016)
- Models of Perceptive Systems II (MsC, 2012-2013)
- Computer Vision (MsC, 2010-2013)
- Microsystems, Measures and Signals 1 (BsC, 2008-2009)
- Foundations of Computer Science (BsC, 2008-2010)

Mentoring

Current

Università di Modena e Reggio Emilia. Supervisor of one PhD student, supervisor of one MSc thesis.

Magic Leap - Università di Genova. Co-supervisor of one PhD student, founded within PNRR - "Dalla Ricerca all'Impresa".

Past

Università di Modena e Reggio Emilia. Supervisor of two MSc thesis

University of California at Berkeley. Co-supervisor of 2 PhD students

Università di Genova. Supervisor of 12 bachelor theses, 13 master theses. Supervisor of 8 traineeships. Co-supervisor of one PhD student and of two graduate research assistants.

Funding

- Project title: Development and testing of a lightweight, all-day glasses-mounted wearable. Period: 2025 – 2026
Funding source: FAR – Curiosity Driven, University of Modena and Reggio Emilia
Role: PI
Funding source: University of Modena and Reggio Emilia
Total amount: 15.000 EUR
- Project title: ARBi - Assessment and Rehabilitation of Binocular Sensorimotor Disorders. Period: 2022 – 2026
Role: Co-PI
Funding source: National Institute of Health, 9000 Rockville Pike, Bethesda, Maryland 20892, USA
Total amount: ~3.200.000USD (personal ~1.000.000USD)

Academic Qualifications

- *Italy*. National Academic Qualification as Associate Professor in Physiology.
- *France*. Qualification as Maître de Conférences, for Section 69 - Neurosciences
- *Spain*. AQU Catalunya, Qualification as Lecturer in Engineering and Architecture

Code and Resources Sharing

- [EMIP – Eye Movements in Programming](#)
- [BORIS database - statistics of retinal disparities, gaze direction and fixation distance in the natural environment.](#)
- [Eye Movement Analysis \(EMA\) Toolbox](#) (600 downloads)
- [Matlab Toolbox for Tobii EyeX Tracker](#) (**5200 downloads**)
- [Genua Pesto - database of High-precision Natural Stereoscopic Pairs in Peripersonal Space](#) (200 downloads)
- [Bio-inspired model of vergence eye movement control for robotic vision](#) (140 downloads)
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Computer skills and competences

High programming proficiency in MATLAB, C/C++. Good programming ability in Python

Good knowledge of the OpenCV and Intel IPP libraries

Good knowledge in 3D CAD (Fusion 360) and 3D graphics software (GeoMagic)

Good knowledge of Windows, Linux and IoT Operative Systems, Raspberry Pi and Arduino

Strong knowledge in document mark-up language LaTeX

Experience in GUI design and implementation for usability and easy user experience

Experience in design, prototyping, and test of wearable ergonomic devices for human performance measurement

Awards

- Assistant Project Scientist Fellowship (Dec 2018 – May 2021). School of Optometry - University of California at Berkeley - 380 Minor Lane, Berkeley, CA, 94720, USA.
- FULBRIGHT Research Scholar Fellowship (June 2016, renounced due to a job appointment).
- Post-Doc Research Fellowship (October 2014 – September 2016). Informatics, Bioengineering, Robotics, and System Engineering Department - University of Genova - Via All' Opera Pia 13 - 16145 Genova Italy.
- Post-Doc Research Fellowship (March 2013 – April 2014). Advanced Research Center on Electronic Systems for Information and Communication Technologies E. De Castro (ARCES), Via Toffano, 2 - 40125 Bologna - Italy.
- Post-Doc Research Fellowship (March 2011 - 2013). Biophysical and Electronic Engineering Department - University of Genova, Via All' Opera Pia 11a - 16145 Genova Italy.
- VISIGRAPP 2012 - Paper Selected to Springer Best Papers Book
- ESANN 2009 - Paper selected to Special Issue: Advances in Machine Learning and Computational Intelligence.
- PhD Research Fellowship (January 2008 - December 2010), Biophysical and Electronic Engineering Department - University of Genova, Via All' Opera Pia 11a - 16145 Genova Italy.

Patents

- Maus G.W., **Gibaldi A.**, Zhao Z., Honle T. (Aug 2025). Methods and systems for dichoptic wobulation.
- **Gibaldi, A.**, Maus, G.W., Binaee, K., Farmer, D (Aug 2023). Saccade prediction assisted by per-user oculomotor performance assessment.
- **Gibaldi, A.**, Maus, G.W., Gao, C., Uhlenhof, K. (Sep 2023). Advanced DPI eyetracking design for measuring gaze and accommodation on a head mounted device.
- **Gibaldi, A.**, B. Vlaskamp, A. Singh, J. Duijnhouwer, A. Pecoraro, N. Shah. (Apr 2023). Fitting of a head-mounted device using a virtual/augmented display and a segmented dimmer display.
- **Gibaldi, A.**, A. Singh, B.N.S. Vlaskamp, M. Mahadevan, J. Duijnhouwer, M.J. Segura, I. Yeoh, N. Shah, A. Pecoraro (Sep 2022). Methods, systems, and computer program products for alignment of a wearable device. International Publication Number [WO 2024064909 A2](#)
- Roorda, A., Banks, M.S., **Gibaldi, A.**, Bowers N. (March 2019). Method and apparatus to track binocular eye motion over a large range. International Publication Number [WO 2020/232309 A1](#)
- Banks, M., Bready, A., **Gibaldi, A.** (March 2017). Using natural scenes and eye-movement statistics to design progressive lenses (provisional patent).

Editor Activity

- Guest Editor for the Special Collection: [Practical Issues in Eye Tracking for Naturalistic Behaviors](#), Behavior Research Methods (Jan 2024).
- Associate Editor for [ICRA 2024 - IEEE International Conference on Robotics and Automation](#) for Medical and Rehabilitation Robotics.
- Guest Editor of the Special Issue *Emerging Spatial Competences: From Machine Perception to Sensorimotor Intelligence*, for the journal Robotic and Autonomous System - RAS, Volume 71, Pages 1-180 (Sep 2015).

Conference Organization

- Special Session Chair for [IMEKO PhotoMet 2025](#), 2025 IMEKO International Symposium on Modern Photonic Metrology, Modena, September 1-3, 2025.
- Organizer of the workshop [ActivEye: Challenges in large scale eye-tracking for active participants](#), Eye Tracking Research and Application conference, ETRA 2021.
- Program Committee member for the International Joint Conference on Neural Networks - IJCNN 2013, 2015, 2017, 2018 and 2019.
- Program Committee member for the workshop: *International Workshop on Advances in Learning from/with Multiple Learners (ALML)*, 2014 and 2015.
- Organizer of the Special Session: *From machine sensing to sensorimotor intelligence*, International Joint Conference on Neural Networks - IJCNN 2013.

Membership

- ARVO - The Association for Research in Vision and Ophthalmology
- VSS - Vision Science Society

Review Activities

Journals: [Behavior Research Methods](#); [PNAS](#); [PLOS One](#); [Journal of Vision](#), [Vision \(MDPI\)](#); [Neurotree](#), [Frontiers in Neuroscience](#); [Robotics and Autonomous Systems](#); [IEEE Transactions on Cybernetics](#); [IEEE Transactions on Systems, Man, and Cybernetics: Systems](#); [IEEE Transactions on Pattern Analysis and Machine Intelligence](#); [IEEE Systems Journal](#); [Sensor](#); [Biomedical Signal Processing and Control](#); [Remote Sensing](#); [Journal of Computer Engineering & Information Technology](#)

Conferences: Eye Tracking Research and Application [ETRA 2020](#), [IJCNN 2013-2019](#) - [International Joint Conference on Neural Networks](#), [3rd INNS Winter Conference 2012](#), [Symposium on Autonomous Machine Learning - Trends in Natural and Machine Intelligence](#), [International Conference on Human-Computer Interaction VISIGRAPP HUCAPP 2020](#).

Social skills and competences

Able to integrate in cross-cultural working environments

- 2022-present – multi-cultural environment of the offices of Magic Leap Inc.,
- 2016-2022 – multi-cultural environment of the University of California at Berkeley,
- 2008-2010 - FP7 European Project EyeShots which involved five institutions across Europe

Established relationship with mass media and establishment acquired from 2005 to 2016 as Public Relations Director in the [Cultural Association Binario Zero](#).

Languages

Native in Italian. Full professional proficiency in English. Basic communication in Spanish and French.

PUBLICATIONS

Journal Papers

- J1. A. Sansalone, A. Canessa, S.P. Sabatini, **A. Gibaldi** Task Dynamics Modulate Discomfort from Vertical Misalignment in See-Through Augmented Reality. *IEEE Transactions on Visualization and Computer - ISMAR* 2026 (in press).
- J2. A. Besozzi, G. Gibertoni, L. Rovati, **A. Gibaldi**. Flexible calibration method: photometric and radiometric measurements with compact low-cost multi-channel sensors. *ACTA IMEKO*, 2026, 15(2), 1-12.
- J3. **A. Gibaldi**, Y. Liu, C. Kaspiris-Rousellis, M. Mahadevan, B.N.S. Vlaskamp, G.W. Maus. Eye posture and screen alignment with simulated see-through head-mounted displays. *Journal of Vision*, 2025, 25.1: 9-9.
- J4. **A. Gibaldi**, Harb, C.F. Wildsoet, and M.S. Banks, 2024. A Child-Friendly Wearable Device for Quantifying Environmental Risk Factors for Myopia. *Translational Vision Science & Technology*, 13(10), pp.28-28.
- J5. DuTell, V., **Gibaldi, A.**, Focarelli, G., Olshausen, B. A., & Banks, M. S. (2024). High-fidelity eye, head, body, and world tracking with a wearable device. *Behavior Research Methods*, 1-11.
- J6. Aizenman, A. M., Koulrieris, G. A., **Gibaldi, A.**, Sehgal, V., Levi, D. M., & Banks, M. S. The statistics of eye movements and binocular disparities during VR gaming: Implications for headset design. *ACM Transactions on Graphics (TOG)*. 2023.
- J7. Kalou, K., Sedda, G., **Gibaldi, A.**, & Sabatini, S. P. Learning bio-inspired head-centric representations of 3D shapes in an active fixation setting. *Frontiers in Robotics and AI*, 9, 2022.
- J8. K. Bonnen, J.S. Matthis, **A. Gibaldi**, M.S. Banks, D.M. Levi, M. Hayhoe. Binocular vision and the control of foot placement during walking in natural terrain. *Scientific Reports* 11.1: 1-12, 2021.
- J9. **A. Gibaldi**, N. Benson, M.S. Banks, Crossed-Uncrossed Projections from Primate Retina are Adapted to Disparities of Natural Scenes. *PNAS* 118 (7) e2015651118, 2021.
- J10. **A. Gibaldi**, V. Labhishetty, L. Thibos, M.S. Banks. The Blur Horopter: Retinal Conjugate Surface in Binocular Viewing. *Journal of vision* 21.3, 2021.
- J11. **A. Gibaldi**, S.P. Sabatini. The Saccade Main Sequence Revised: a Fast and Repeatable Tool for Oculomotor Analysis, *Behavior Research Methods*, 2020.
- J12. A. Caoli, S.P. Sabatini, **A. Gibaldi**, G. Maiello, A. Kosovicheva, P.J. Bex. A Dichoptic Feedback-Based Oculomotor Training Method to Manipulate Interocular Alignment, *Scientific Reports* 10, 15634, 2020.
- J13. T. Busjan, **A. Gibaldi**, et al. The Eye Movements in Programming (EMIP) Dataset. *Science of Computer Programming*, 198, 102520, 2020.
- J14. **A. Gibaldi**, M.S. Banks. Binocular Eye Movements are Adapted to the Natural Environment. *Journal of Neuroscience*, 2591-18, 2019.
- J15. **A. Gibaldi**, A. Canessa, S.P. Sabatini. The Active Side of Stereopsis: Fixation Strategy and Adaptation to Natural Environments. *Scientific Report*, 7(1), 1-18, 2017.
- J16. A. Canessa*, **A. Gibaldi***, M. Chessa, M. Fato, F. Solari, S.P. Sabatini. A dataset of stereoscopic images and ground-truth disparity mimicking human fixations in peripersonal space. *Scientific Data*, 2017. *First two authors provided equal contribution.
- J17. **A. Gibaldi**, M. Vanegas, A. Canessa, S.P. Sabatini. A portable bio-inspired architecture for efficient robotic vergence control. *International Journal of Computer Vision*, 121(2), 281-302, 2016.
- J18. **A. Gibaldi**, G. Maiello, M. Vanegas, P.J. Bex. Evaluation of the Tobii EyeX Eye Tracking Controller and Matlab Toolkit for Research. *Behavior Research Methods*, 2016.
- J19. **A. Gibaldi**, S.P. Sabatini, S. Argentieri, Z. Ji. Emerging spatial competences: From machine perception to sensorimotor intelligence. *Robotics and Autonomous Systems*, 2015.
- J20. **A. Gibaldi**, A. Canessa, M. Chessa, F. Solari, and S.P. Sabatini. Autonomous Learning of Disparity-Vergence Behavior through distributed coding and population reward: basic mechanisms and real-world conditioning on a robot stereo head. *Robotics and Autonomous Systems*. 2015.
- J21. **A. Gibaldi**, D. Barone, S. Malavasi, A. Bevilacqua, G. Gavelli. Effects of guided random sampling of TCCs on perfusion values in liver and lung tumors CT studies. *Academic Radiology*, 2015.
- J22. M. Antonelli, **A. Gibaldi**, F. Beuth, A. J. Duran, A. Canessa, M. Chessa, F. Solari, A. P. del Pobol, F. Hamker, E. Chinellato, S. P. Sabatini. A hierarchical system for a distributed representation of the peripersonal space of a humanoid robot. *IEEE Transaction on Autonomous Mental Development*, 1-15, 2014.
- J23. A. Canessa, M. Chessa, **A. Gibaldi**, S.P. Sabatini, F. Solari. Calibrated depth and color cameras for accurate 3D interaction in a stereoscopic augmented reality environment. *Journal of Visual Communication and Image Representation*, Special Issue on Visual Understanding and Application, ISSN 1047-3203, 2013.

- J24. Barranco, F., Diaz, J., **Gibaldi, A.**, Sabatini, S.P., and Ros, E. Vector Disparity Sensor with Vergence Control for Active Vision Systems. *Sensors* 2012, 12, 1771-1799, 2011.
- J25. N. Chumerin, **A. Gibaldi**, S.P. Sabatini, M.M. Van Hulle. Learning Eye Vergence Control from a Distributed Disparity Representation. *International Journal of Neural Systems* 20(4): 267–278, 2010.
- J26. **A. Gibaldi**, M. Chessa, A. Canessa, S.P. Sabatini, F. Solari, A cortical model for the control of vergence without explicit calculation of disparity. *Neurocomputing*, Special Issue on Advances in Machine Learning and Computational Intelligence, 73(7-9): 1065-1073, 2010.

Under review / in preparation

- P1. D. Rossi, A. Besozzi, G. Borghi, G. Gibertoni, **A. Gibaldi**, R. Vezzani. PHOS-Net: Efficient Metric-Anchored RGB-dToF Fusion for Embedded Depth Estimation. *BMVC 2026* (under review).
- P2. **A. Gibaldi**, A. Aizenman, D.M. Levi, M.S. Banks. Oculomotor Performance and Binocular Coordination in Stereo-Anomalous Binocular Vision. In preparation for *Journal of Vision*.
- P3. **A. Gibaldi**, V. DuTell, M.S. Banks. Three-dimensional Eye Tracking Calibration in the Wild. In preparation for *Behavior Research Methods*.

Oral Presentations

- O1. Aligning to See or Seeing to Align? Stereovision as Sensorimotor Optimization. IMRF 2026 - International Multisensory Research Forum 2026, Symposium on "Perception in action: the role of interaction and behavior in multisensory experience".
- O2. The Visual System: From the Lab to the Wild. French Annual Vision Science Conference 2026. **Invited Keynote presentation**. Jan 2026.
- O3. Binocular Coordination in Stereo-Anomalous Binocular Vision, ARVO 2025.
- O4. The visual system and the natural environment: perceptual, behavioural and computational advances, Oxyopia seminar series, UC Berkeley. Sep 2020.
- O5. Measuring the visual environment of children who do and do not develop myopia. *Wavefront Congress 2020*. **Invited talk**. Feb 2020.
- O6. Binocular Vision, Oculomotor Behavior, and the Statistics of Natural Scenes. *Wavefront Congress 2020*. **Invited talk**. Feb 2020.
- O7. Naso-temporal Division of Retinal Ganglion Cells is Adapted to Natural Binocular Disparities. *ECVP 2019*.
- O8. The visual system and the natural environment: perceptual, behavioural and computational advances, University of Pisa, Italy. **Invited talk**. July 2019.
- O9. The visual system and the natural environment: perceptual, behavioural and computational advances, University of Genoa, Italy. **Invited talk**. June 2019.
- O1. Tracking of lateral and torsional eye movements over a wider range - proof of concept. *Adaptive Optics Psychophysics Workshop Agenda, UC Berkeley*, June 2019.
- O2. Nasotemporal Division of Retina is Well Suited for Disparities of Natural Scenes. *VSS 2019*.
- O3. The visual system and the natural environment: perceptual, behavioural and computational advances, Reno University, Reno, NV, USA, **Invited talk**. Apr. 05, 2019.
- O4. The visual system and the natural environment: perceptual, behavioural and computational advances, New York University at Abu Dhabi, Abu Dhabi, United Arab Emirates, **Invited talk**. Apr. 18, 2019.
- O5. The visual system and the natural environment: perceptual, behavioural and computational advances, New York University at Abu Dhabi, Abu Dhabi, United Arab Emirates, **Invited talk**. Feb. 19, 2019.
- O6. The visual system and the natural environment: computational, perceptual, and behavioural and advances, Tilburg University, Tilburg, the Netherlands, **Invited talk**. Sep. 07, 2018.
- O7. Retinal-Conjugate Surfaces: The Blur Horopter. *ECVP 2018*.
- O8. Oculomotor adaptation to natural environments: The empirical isovergence surface. *ECVP 2017*.
- O9. Modeling Accommodation Control of the Human Eye: Chromatic Aberration and Color Opponency. *MODVIS 2017*.
- O10. An integrated system based on binocular learned receptive fields for saccade-vergence on visually salient targets. *VISAPP 2107*.
- O11. Visuomotor Behavior of Dominant and Non-Dominant Eye in 3D Visual Exploration. *ECVP 2016*.
- O12. Vergence Eye Movements to Unbalanced Dichoptic Visual Stimuli, *ECVP 2016*.
- O13. Modelling Short-Latency Disparity-Vergence Eye Movements Under Dichoptic Unbalanced Stimulation. Computational and Mathematical Models in Vision – *MODVIS 2016*.

- O14. *Distributed approach to information coding: toward an internal reward for autonomous learning* IJCNN 2013, Dallas, TX. August 4–9, 2013. **Invited talk** in the IJCNN Workshop: Autonomous learning systems.
- O15. *Population coding for a reward-modulated Hebbian learning of vergence control*. IJCNN 2013, Dallas, TX. August 4–9, 2013. Special Session: From machine sensing to sensorimotor intelligence.
- O16. *How a population-based representation of binocular visual signal can intrinsically mediate autonomous learning of vergence control*. INNS-WC 2012. **Invited talk** in the INNS Symposium on Autonomous Learning
- O17. *A neuromorphic control module for real-time vergence eye movements on the iCub robot head*. Humanoids 2011, 11th IEEE-RAS International Conference on Humanoid Robots.
- O18. *Reading binocular energy population codes for short-latency disparity-vergence eye movements*. International Conference on Cognitive and Neural Systems, ICCNS 2009.
- O19. *Vergence movements elicited by image disparity*. European Workshop on Advanced Predictive Sensor-Motor Control, Joudkrante, Lithuania, 21-24 May 2009.
- O20. *A neural model for the control of vergence without explicit calculation of disparity*. ESANN 09 – European Symposium on Artificial Neural Networks, Advances in Computational Intelligence and Learning, 2009.

Book Chapters

- B1. M. Chessa, M. Garibotti, A. Canessa, **A. Gibaldi**, S.P. Sabatini, F. Solari. Veridical perception of 3D objects in a dynamic stereoscopic augmented reality system. *Lecture notes in Communications in Computer and Information Science (CCIS)*, Springer-Verlag, 2013.
- B2. A. Canessa, **A. Gibaldi**, M. Chessa, S.P. Sabatini, F. Solari. The Perspective Geometry of the Eye: Toward Image-Based Eye-Tracking. In *Human-Centric Machine Vision*, ISBN: 978-953-51-0563-3, 2012.
- B3. S.P. Sabatini, F. Solari, A. Canessa, M. Chessa, and **A. Gibaldi**. Early perception-action cycles in binocular vision: visuomotor paradigms and cortical-like architectures. In Dr. M. Pomplun and Dr. J. Suzuki (ed). *Developing and Applying Biologically-Inspired Vision Systems: Interdisciplinary Concepts*. University of Massachusetts, Boston, MA. 2011.

Conference Papers

- C1. F. Ferracini, F. Peveri, S.P. Sabatini, **A. Gibaldi**, A. Canessa. Custom Monocular Calibration for Enhanced Eye-Tracking Accuracy. EMBC 2025 - The Engineering in Medicine and Biology Conference.
- C2. **A. Gibaldi**, V. DuTell, M.S. Banks. Solving Parallax Error for 3D Eye Tracking. *ActivEye Workshop - ETRA'21*, ACM Symposium on Eye Tracking Research.
- C3. V. DuTell, **A. Gibaldi**, G. Foccarelli, B. Olshausen, M.S. Banks. Integrating High Fidelity Eye, Head and World Tracking in a Wearable Device. *ActivEye Workshop - ETRA'21*, ACM Symposium on Eye Tracking Research
- C4. N.R. Bowers, **A. Gibaldi**, E. Alexander, M.S. Banks, A. Roorda. High-Resolution Eye Tracking Using Scanning Laser Ophthalmoscopy. *ETRA '19*, ACM Symposium on Eye Tracking Research.
- C5. **A. Gibaldi**, A. Canessa, M. Chessa, F. Solari, S.P. Sabatini. The GENUA PESTO Database: An Open-Source Tool for Human and Machine Vision. *ICCV2017 Workshop on Mutual Benefits of Cognitive and Computer Vision*.
- C6. K. Kalou, **A. Gibaldi**, A. Canessa, S.P. Sabatini. Learning a compositional hierarchy of disparity descriptors for 3D orientation estimation in an active fixation setting. *26th International Conference on Artificial Neural Networks (ICANN 2017)*.
- C7. D. Re, **A. Gibaldi**, M. Spratling, S.P. Sabatini. An integrated system based on binocular learned receptive fields for saccade-vergence on visually salient targets. *12th International Joint Conference on Computer Vision Theory and Application (VISAPP 2107)*.
- C8. **A. Gibaldi**, A. Canessa, and S.P. Sabatini. Vergence Control Learning through Real V1 Disparity Tuning Curves. *7th International IEEE EMBS Neural Engineering Conference (NER 2015)*.
- C9. **A. Gibaldi**, A. Canessa, M. Chessa, F. Solari, and S.P. Sabatini. Population coding for a reward-modulated Hebbian learning of vergence control. In *Neural Networks (IJCNN), The 2013 International Joint Conference on*.
- C10. **A. Gibaldi**, A. Canessa, F. Solari, S.P. Sabatini. How a population-based representation of binocular visual signal can intrinsically mediate autonomous learning of vergence control. **Invited contribution** at the *INNS-WC 2012: International Neural Network Society Winter Conference*, Oct 3-5, 2012.
- C11. **A. Gibaldi**, A. Canessa, M. Chessa, F. Solari, S.P. Sabatini. A neural model for coordinated control of horizontal and vertical alignment of the eyes in three-dimensional space. *IEEE International Conference on Biomedical Robotics and Biomechatronics*.
- C12. M. Chessa, M. Garibotti, A. Canessa, **A. Gibaldi**, S.P. Sabatini, F. Solari. A stereoscopic augmented reality system for the veridical perception of the 3D scene layout. Accepted for **oral presentation** at the *International Conference on Computer Vision Theory and Applications (VISAPP 2012)*.

- C13. **A. Gibaldi**, A. Canessa, M. Chessa, S.P. Sabatini, F. Solari. Accepted for **oral presentation** A neuromorphic control module for real-time vergence eye movements on the iCub robot head. *Humanoids 2011, 11th IEEE-RAS International Conference on Humanoid Robots*.
- C14. G. Maiello, C. Silvestro, A. Canessa, M. Chessa, **A. Gibaldi**, S.P. Sabatini, F. Solari. Assessment of stereoscopic depth perception in augmented reality environments based on low-cost technologies. *Applied perception in graphics and visualization (APGV11)*.
- C15. N. Chumerin, **A. Gibaldi**, S.P. Sabatini, M. Van Hulle. Convolutional Network for Vergence Control. *International Symposium on Applied Sciences in Biomedical and Communication Technologies*.
- C16. **A. Gibaldi**, M. Chessa, A. Canessa, S.P. Sabatini, F. Solari. A neural model for the control of vergence without explicit calculation of disparity. Accepted for **oral presentation** at the *European Symposium on Artificial Neural Networks (ESANN 2009)*, Advances in Computational Intelligence and Learning.

Conference Abstracts:

- A1. A. Besozzi, G. Gibertoni, L. Rovati, **A. Gibaldi**. Beyond Channel Count: Metrological Performance Metrics for Compact Multi-Channel Spectral Sensors, *IMEKO PhotoMet 2026*.
- A2. A. Canessa, F. Ugoni, F. Peveri, A. Sansalone, **A. Gibaldi**, S.P. Sabatini. A unified continuous psychophysics approach for concurrent assessment of oculomotor behavior and perceptual thresholds. *VSS 2026*.
- A3. A. Besozzi, G. Gibertoni, L. Rovati, **A. Gibaldi**. Development and Testing of a Lightweight, All-Day Glasses-Mounted Wearable: Investigating the Visual Environment in Children for Myopia Risk Assessment, *IMEKO PhotoMet 2025*.
- A4. **A. Gibaldi**, A. Aizenman, D.M. Levi, M.S. Banks. Binocular Coordination in Stereo-Anomalous Binocular Vision, *ARVO 2025*.
- A5. A. Canessa, F. Peveri, F. Ferracini, **A. Gibaldi**, S.P. Sabatini. Monocular Calibration for VR Eye Tracking: Correcting Gaze Data for Binocular Disorders. *ARVO 2025*.
- A6. F. Ferracini, S.P. Smithers, E. Wiece, N. Chaudhry, F. Peveri, P.J. Bex, A. Canessa, M.S. Banks, D. Levi, S.P. Sabatini, **A. Gibaldi**. VR-CUT, the Cover-Uncover Test in Virtual Reality: Easy and Accurate Assessment of Strabismus Across Gaze Eccentricities and Fixation Distances. *ARVO 2025*.
- A7. A. Canessa, F. Peveri, F. Ferracini, S.P. Sabatini, **A. Gibaldi**. A Custom Monocular Calibration Method for Eye Tracking in Virtual Reality: Accurate Correction of Gaze Data for Binocular Disorder Applications. *ARVO 2025*.
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Gibrati Gauthier