

## Prof. Monica Bordegoni

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### 1. SUMMARY

#### 1.1 Education and current position

Monica Bordegoni was awarded a M.Sc degree in Computer Science at the Università degli Studi di Milano in 1988, and currently is full professor at the Department of Mechanical Engineering, School of Design of Politecnico di Milano since 2004.

#### 1.2 Academic positions

2004 - Politecnico di Milano, Full Professor, School of Design  
2001 - 2004 Politecnico di Milano, associate professor, Faculty of Design  
1998 - 2001 University of Parma, associate professor, Faculty of Engineering

#### 1.3 Previous positions

1993-1998 researcher at the coordination board of the targeted project on robotics of CNR (National Research Council).  
1991-1993 awarded EU ERCIM Post-Doc scholarship ([www.ercim.eu](http://www.ercim.eu)): visiting fellow hosted by European research centers: RAL-UK, CWI-the Netherlands, and GMD-Germany.  
1989-1991 research fellow at CNR (National Research Council) – Institute for industrial automation  
1989 research staff on industrial automation, TASK Ricerca&Sviluppo, Ispra.

#### 1.4 Research Areas

Methods and tools for virtual prototyping of products, interaction techniques and multimodal technologies, product experience, multisensory interaction, haptic technologies and interaction, and on their application in the engineering and industrial design sectors, olfactory display, emotional engineering.

#### 1.5 Awards & Honors

- ICED17 Reviewers' Favorite, the paper presented was rated in the top 10% papers based on reviewers' scores, ICED 2017 – Vancouver, 21-25 August 2017:  
M. Bordegoni, M. Carulli, Rapid Prototyping products mapping live-data streams into tangible user interfaces.
- CIE best paper awards, ASME IDETC/CIE Conference 2017, Cleveland, 8-10 August 2017:  
Caruso G., Ruscio D., Ariansyah D., Bordegoni M., "Driving simulator system to evaluate driver's workload using ADAS in different driving context"
- ICoRD'17 "One of the most distinguished papers presented at the International Conference on Research into Design", ICoRD'17 Conference, Guwahati, 7-9 January 2017 for the papers:  
Carulli M., Vitali A., Caruso G., Bordegoni M., Rizzi C., Cugini U., ICT technology for innovating the garment design process in fashion industry,
- Design&Emotion 2016 Best Paper Award, 10<sup>th</sup> International Conference on Design & Emotion, Amsterdam, The Netherlands, 27-30 September 2016:
- ICIDM2016 Best Paper Award, ICIDM2016, Auckland, NZ, January 2016:
- Premio Innovazione SMAU 2016 "ABILITY - TELEREHABILITATION: INTEGRATED PLATFORM ENABLING THE REMOTE DELIVERY AND CONTROL OF PHYSICAL AND COGNITIVE REHABILITATION, AND SELF MANAGEMENT" (<https://goo.gl/HHw1le>).
- ICED'15 Reviewers' Favorite, the paper presented was rated in the top 10% papers based on reviewers' scores, ICED'15, Milano, Italy, 27-30 July 2015:

Graziosi S., Ferrise F., A. Costanzi, Bordegoni M., Designing multisensory feedback to make users behave in a more sustainable way, ICED'15

- ICoRD'15 "One of the most distinguished papers presented at the International Conference on Research into Design", ICoRD'15 Conference, Bangalore, 7-9 January 2015 for the papers:
  - Carulli M., Bordegoni M., Cugini U., Weibin D., A methodology for the analysis of the influence of odours on the users' evaluation of industrial products.
  - Ugur Yavuz S., Carulli M., Bordegoni M., A Design Practice on Communicating Emotions through Visual, Tactile and Auditory Simulations,
- EuroVR 2014 - Best Industrial Impact Award, awarded by the 11<sup>th</sup> Conference and Exhibition of the European Association of Virtual and Augmented Reality, EuroVR Conference, Bremen, December 10 2014.
- Computer-Aided-design and Applications, 10(3), 461-474, 2013 – Editor's Choice for 2013: F. Ferrise, M. Bordegoni, S. Graziosi "A method for designing users' experience with industrial products based on a multimodal environment and Mixed Prototypes" (<http://explore.tandfonline.com/page/est/cad-launch>).
- ICED'13 Reviewers' Favorite, the paper presented was rated in the top 10% papers based on reviewers' scores, ICED'13 – Design for Harmonies, Seoul, Korea, 17-20 August 2013: Graziosi S., Ferrise F., Bordegoni M., Ozbey O., A method for capturing and translating qualitative user experience into design specifications: the haptic feedback of appliance interfaces
- appreciation of the ASME-CIE division for valued services in advancing the engineering profession as Panelist 'Addressing the NAE Grand Challenges through research in CIE', 31<sup>st</sup> ASME-CIE Conference, Washington, DC, 2011.
- best contribution award, TMCE – Tools and Methods for Competitive Engineering, April 2010.
- "Haptic Devices in Mixed-Reality Environment for Interior Car design Evaluation" project, winner of RTT - emerging technology contest, 2009.
- SATIN system, selected among the best projects at the inventiON - contest on inventing ideas, Alintec and Nova 24-II sole 24 ore, 2010.

## 1.6 Visiting and fellowships at foreign institutions

Fellowship granted by CNR (Italian National Research Council) within the frame of international short-term mobility exchange (June/August 1997) spent at the University of Karlsruhe.

27 February – 3 March 2017, Visiting at MAEER – MIT Pune, within the frame of Erasmus Mundus KA107 project.

## 2. PUBLICATIONS

### 2.1 Scientific publications

Monica Bordegoni has published more than 40 articles in ISI/Scopus scientific journals and more than 50 in proceedings of Scopus-indexed conferences (including ASME, SPIE, IEEE conferences) on the major research subjects.

### 2.2 Selected Publication

#### Books

Aesthetic shapes evaluation through haptic technology. ISBN-13:978-3-659-30291-6. ISBN-10:3659302910. Publishing house: [LAP LAMBERT Academic Publishing](http://www.lap-lambert.com). By (author): M. Covarrubias, M. Bordegoni, U. Cugini, Published on: 2012-12-05

Mansutti, A., Covarrubias Rodriguez, M., Bordegoni, M., Cugini, U., Tactile Display for Virtual 3D Shape Rendering, PoliMI SpringerBriefs, January 2017, ISBN 978-3-319-48985-8.

#### Books edited

Innovation in Product Design – from CAD to Virtual Prototyping, Bordegoni M. and Rizzi C. Eds., Springer, August 2011, ISBN: 978-0-85729-775-4.

### Book Chapters

Bordegoni M., Cugini U., Ferrise F., Interactive Virtual Prototyping for Improving the Design of Consumer Products (Chapter 10), "Advances in Computers and Information in Engineering Research", Volume I, (Michopoulos J., Rosen D., Paredis C., Vance J. eds.), ASME Press, August 2014. ISBN: 978-0-7918-6032-8

Cugini U., Bordegoni M., Romagnoli V., Metodologie di progettazione e simulazione, Capitolo 11, "Manuale delle macchine utensili" (a cura di B. Maiocchi e M. Rossi), Tecniche Nuove, pp.453-494, 2014. ISBN: 978-88-481-2719-6

Bordegoni M., Cugini U., Ferrise F., Multisensory user experience design of consumer products, "Emotional Engineering vol. 2" (S. Fukuda Ed.), pp. 219-242, Springer, 2013. ISBN: 978-1-4471-4983-5

Covarrubias M., Bordegoni M., Cugini U., Gatti E., Supporting Unskilled People in Manual Tasks through Haptic-Based Guidance, "Information Systems Research and Exploring Social Artifacts: Approaches and Methodologies" (Pedro Isaias and Miguel Baptista Nunes Eds.), pp. 355-378. IGI Global, 2012. DOI: 10.4018/978-1-4666-2491-7, ISBN13: 9781466624917, <http://www.igi-global.com/book/information-systems-research-exploring-social/68188>.

Bordegoni M., Product virtualization: an effective method for the evaluation of concept design of new products, "Innovation in Product Design – from CAD to Virtual Prototyping" (Bordegoni M., Rizzi C. Eds.), Springer, August 2011, ISBN 978-0-85729-775-4

Bordegoni M., Exploitation of Designers and Customers' Skills and Creativity in Product Design and Engineering, "Emotional Engineering: Service Development" (S. Fukuda Editor), pp. 63-85, Springer, 2011. ISBN: 978-1-84996-422-7

### Journal Special Issues

Special Issue on Emotion and Multi-dimensional Engineering, Journal of Integrated Design and Process Science, S. Fukuda and M. Bordegoni (Eds.), volume 20, Issue 2, 2016, doi: 10.3233/jid-2016-0011.

### Articles in Journals

Etzi R., Gallace A., Zampini M., Francesco F., Bordegoni M., The effect of visual and auditory information on the perception of pleasantness and roughness of virtual surfaces, Multisensory Research Journal, 2017.

Bordegoni M., Carulli M., Shi Y., Ruscio D., Investigating the effects of odours integration in reading and learning experiences, Focus Section on 'Transforming books and the reading experience through interactive technologies', Interaction Design and Architecture, (32), pp. 107 - 127, 2017.

Covarrubias M., Bordegoni M., Caruso G., Cugini U., Freehand gesture and tactile interaction for Shape Design, Journal of Computing and Information Science in Engineering, April 2016.

Mansutti A., Covarrubias M., G. Caruso G., Bordegoni M., Cugini U., Visuo-tactile system for 3D digital models rendering, Computer-Aided Design and Applications, 13(2):263-245, 2016.

Camere S., Bordegoni M., Unfolding the Notion of Experience (Virtual) Prototyping: A Framework for Prototyping in an Experience-Driven Design Process, Journal of Integrated Design and Process Science, vol. 20, no. 2, pp. 17-30, 2016, DOI: 10.3233/jid-2016-0012.

Montalto A., Graziosi S., Bordegoni M., Di Landro L., An inspection system to master dimensional and technological variability of fashion-related products: a case study in the eyewear industry, Computers in Industry, Vol. 83, December 2016, pp.140–149, <http://dx.doi.org/10.1016/j.compind.2016.09.007>.

Mengoni M., Peruzzini M., Monica Bordegoni M. & Mecella M., Toward an integrated platform to support contract furniture industry, Computer-Aided Design and Applications, 2016, DOI: 10.1080/16864360.2016.1150712, <http://dx.doi.org/10.1080/16864360.2016.1150712>

Bordegoni M., Carulli M., Evaluating industrial products in an innovative visual-olfactory environment, ASME-JCISE, March 2016, doi:10.1115/1.4033229

Bordegoni M., Covarrubias M., Caruso G., Cugini U., Reverse Engineering and Augmented Reality Haptic Interface for Shape Design, ASME-JCISE, March 2016, doi:10.1115/1.4033230

- Re G.M., Bordegoni M., Oliver J.H., Evaluation of an industrially affordable monitor-based Augmented Reality system to support manual tasks, *Cognition, Technology & Work*, Springer, 2016, DOI: 10.1007/s10111-016-0365-3.
- Carulli M., Bordegoni M., Cugini U., Integrating Scents Simulation in Virtual Reality Multisensory Environment for Industrial Products Evaluation, *Computer Aided Design & Applications*, DOI:10.1080/16864360.2015.1114390, on line 11 December 2015.
- Covarrubias M., Bordegoni M., Cugini U., A Hand Gestural Interaction System for handling a Desktop Haptic Strip for Shape Rendering, *Sensors and Actuators A: Physical*, Elsevier, Ms. Ref. No.: SNA-D-14-00890R1, on line August 6, 2015.
- Covarrubias M. Mansutti A., Bordegoni M., Cugini U., Flexible touch sensor for evaluating geometric properties of virtual shapes through sound, *Virtual and Physical Prototyping*, Taylor & Francis, 2015, pp. 1-13 | DOI: 10.1080/17452759.2015.1046036
- Ferrise F., Graziosi S., Bordegoni M., Prototyping strategies for multisensory product experience engineering. *Journal of Intelligent Manufacturing*, vol. 0, p. 1-13, ISSN: 0956-5515, doi: 10.1007/s10845-015-1163-0, 2015.
- Ferrise F., Bordegoni M., Marseglia L., Fiorentino M., Uva A.E., Can Interactive Finite Element Analysis Improve the Learning of Mechanical Behavior of Materials? A Case Study. *COMPUTER-AIDED DESIGN AND APPLICATIONS*, vol. 12, p. 45-51, ISSN: 1686-4360, doi: 10.1080/16864360.2014.949573, 2015.
- Akyeampong J., Udoka S., Caruso G., Bordegoni M. (2014). Evaluation of hydraulic excavator Human e Machine Interface concepts using NASA TLX. *INTERNATIONAL JOURNAL OF INDUSTRIAL ERGONOMICS*, vol. 44, p. 374-382, ISSN: 0169-8141, doi: 10.1016/j.ergon.2013.12.002
- Camere S., Bordegoni M., A strategy to support Experience Design Process: the Principle of Accordance, *Theoretical Issues in Ergonomics Science (Special Issue: Human Factors Design: A Special Issue based on selected presentations from the 5th International Conference on Applied Human Factors and Ergonomics (AHFE) and the Affiliated Conferences 2014)*, Taylor & Francis, Vol. 16, issue 4, pp. 347-365, 2015. DOI:10.1080/1463922X.2015.1014069
- Caruso G., Re G.M., Carulli M., Bordegoni M., Novel Augmented Reality system for Contract Design Sector, *Computer-Aided Design and Applications*, 11(4), 389-398, 2014, DOI:10.1080/16864360.2014.881181
- Covarrubias M. and Bordegoni M., Design of a Desktop Haptic System driven by CAD and Multi-body Associativity, *Computer-Aided Design and Applications*, 11(4), 450-458, 2014, DOI:10.1080/16864360.2014.881181
- Covarrubias M., Bordegoni M., Interaction with virtual aesthetic shapes through a desktop mechatronic system, A desktop system that supports designers in the creation, evaluation and modification of aesthetic virtual shapes, *Virtual and Physical Prototyping Journal*, Taylor & Francis, Volume 9, Issue 1, 2014, pp. 27-43. DOI:10.1080/17452759.2013.866873
- Bernasconi A., Kharshiduzzaman M., Anodio L.F., Bordegoni M., Re G.M., Braghin F. and Comolii L., Development of a Monitoring System for Crack Growth in Bonded Single-Lap Joints Based on the Strain Field and Visualization by Augmented Reality, *The Journal of Adhesion*, Volume 90, Issue 5-6, pp. 496-510, 2014, Special Issue: Durability of Adhesive.
- Ferrise F., Caruso G., Bordegoni M., Multimodal Training and Tele-Assistance systems for the Maintenance of Industrial Products, *Virtual and Physical Prototyping*, Taylor & Francis, 8(2), pp. 113-126, 2013. DOI:10.1080/17452759.2013.798764
- Covarrubias M., Bordegoni M., Cugini U., Force sensitive handles and Capacitive touch sensor for driving a Flexible Haptic-based immersive system, *Sensors (Open Access Journal)*, 2013, □Volume: 13 □Page(s): 13487-13508 (<http://www.mdpi.com/1424-8220/13/10/13487/>), doi:10.3390/s131013487.
- Covarrubias M., Bordegoni M., Cugini U., Continuous surface rendering; passing from CAD to physical surface representation, *International Journal of Advanced Robotic Systems*, InTech, 2013, ISSN 1729-8806, DOI: 10.5772/56536.
- Covarrubias M., Gatti E., Bordegoni M., Cugini U., Mansutti A., Improving manual skills in persons with disabilities (PWD) through a multimodal assistance system, *Disability and Rehabilitation: Assistive Technology*. 07/2014; 9(4):335–343. Posted online on May 21, 2013, doi: 10.3109/17483107.2013.799238.
- Gatti E., Bordegoni M., Spence C., Investigating the influence of colour, weight, & fragrance intensity on the perception of liquid bath soap: An experimental study, *Food Quality and Preference Journal*,

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Carulli M., Bordegoni M., Cugini U., An integrated framework to support design & engineering education, *The International Journal of Engineering Education (IJEE)*, Vol. 29, n. 2, Special Issue on Computer-Aided creativity enhancement in engineering education, Tempus Publications, A. Ibrahim (Ed.), 2013.

Ferrise F., Bordegoni M., Cugini U., Interactive Virtual Prototypes for testing the interaction with new products, *Computer-Aided Design & Applications*, 10(3), 2013, 515-525, ISSN:1686-4360, DOI: 10.3722/cadaps.2013.515- 525.

Ferrise F., Bordegoni M., S. Graziosi S., A method for designing users' experience with industrial products based on a multimodal environment and Mixed Prototypes, *Computer-Aided Design & Applications*, 10(3), 2013, 461-474, ISSN:1686-4360, DOI: 10.3722/cadaps.2013.461-474.

Bordegoni M., Cugini U., Ferrise F., Requirements for an enactive tool to support skilled designers in aesthetic surfaces definition, *International Journal on Interactive Design and Manufacturing (IJIDeM)*, Vol. 6. No. 2, pp. 83-91, 2012, DOI: 10.1007/s12008-012-0142-3, ISSN:1955-2513.

Carulli M., Bordegoni M., Cugini U., An approach for capturing the voice of the customer based on virtual prototyping, *Journal on Intelligent Manufacturing*, Springer, pp. 1-19, June 2012, DOI 10.1007/s10845-012-0662-5, 2012, ISSN: 0956-5515.

Bordegoni M., Caruso G., Mixed-Reality distributed platform for collaborative design review of automotive interiors, *Research in Engineering Design*, Taylor & Francis, ISSN: 1745-2759 eISSN: 1745-2767, pp 1-17, 2012, DOI: 10.1080/17452759.2012.740877

Bordegoni M., Ferrise F., Designing interaction with consumer products in a multisensory virtual reality environment, *Virtual and Physical Prototyping*, Taylor & Francis, vol. 8 (1) 51-64, 2012, DOI:10.1080/17452759.2012.76261

<http://www.tandfonline.com/doi/abs/10.1080/17452759.2012.762612>.

Bordegoni M., Ferrise F., Covarrubias M., Antolini M., Geodesic Haptic Interface for haptic Curve Rendering, *IEEE Transactions on Haptics*, volume 4, issue 2, 111-121, 2011.

Bordegoni M., Cugini U., Covarrubias M., Design of a visualization system integrated with haptic interfaces, *Journal of Design Research JDR*, Special Issue on the subject "Current Concerns of Industrial Design Engineering Research", InderScience, volume 8, number 3, 235-251, 2010.

Bordegoni M., Ferrise F., Ambrogio M., Caruso F. and Bruno F., Data exchange and multi-layered architecture for a collaborative design process in virtual environments, *International Journal on Interactive Design and Manufacturing (IJIDeM)*, volume 4, Number 2, 2010, 137-148.

Cugini U., Bordegoni M., A CAD system based on haptic modeling for conceptual design, *International Journal of Product Development*, InderScience, volume 11, number 1-2, 25-46, 2010.

Guidi G., Russo M., Magrassi G., Bordegoni M., Performance Evaluation of Triangulation Based Range Sensors, *Sensors* 2010, 10(8), 7192-7215.

Bordegoni M., and Cugini U., Tools for Industrial Design: From Barriers to Enablers of Creativity, *Computer-Aided Design and Applications*, volume 7, n. 5, 2010, 711-721.

Bordegoni M., Ferrise F., Covarrubias M., Antolini M., Haptic and Sound Interface for Shape Rendering, *Presence: Teleoperators and Virtual Environments*, MITPress, August 2010, Vol. 19, No. 4: 341–363.

Ferrise F., Bordegoni M., Lizaranzu J., Product Design Review Application Based on a Vision-Sound-Haptic Interface, *HAPTIC AND AUDIO INTERACTION DESIGN Conf.*, Lecture Notes in Computer Science (LNCS), 2010, Volume 6306/2010, 169-178, Springer, 2010.

Bordegoni M., Cugini U., Covarrubias M., Antolini M., A Force and Touch Sensitive Self-deformable Haptic Strip for Exploration and Deformation of Digital Surface, *Lecture Notes in Computer Science (LNCS)*, *HAPTICS: Generating and Perceiving Tangible Sensations*, Springer, Volume 6192/2010, 65-72, 2010.

Araujo B., Guerreiro T., Fonseca M.J., Pereira J., Bordegoni M., Ferrise F., Covarrubias M., Antolini M., An Haptic based Immersive Environment for Shape Analysis and Modeling, *Journal of Real-Time Image Processing (JRTIP)*, Special Issue, Springer Berlin, Volume 5, Number 2, 73-90, 2010.

Bertoni M., Bordegoni M., Cugini U., Regazzoni D., Rizzi C., PLM paradigm: How to lead BPR within the Product Development field, *Computers in Industry* 60, 2009, pp. 476-484.

Bordegoni M., Cugini U., Caruso G., Polistina S., Mixed Prototyping for Product Assessment: a

Reference Framework, International Journal on International Design and Manufacturing - IJIDeM journal, Springer, Vol 3(3), August 2009.

Bordegoni M., Cugini U., Mana R., The role of Virtual Prototyping and Simulation in the fashion sector, International Journal on Interactive Design and Manufacturing - IJIDeM, Springer Verlag, 2:33-38, 2008.

Bordegoni M., Cugini U., The role of haptic technology in the development of aesthetic driven products, Special Issue on Haptics, Tactile and Multimodal Interfaces, ASME Journal of Computing and Information Science in Engineering (JCISE), v(8) n(4), December 2008.

Bordegoni M., Human factors in design validation of interactive devices, Special Issue of Japanese Society for the Science of Design / Inventive Creation of Digital Design, pp. 25-30, vol. 15-4, no. 60, 2008.

Cugini U., Bordegoni M., Touch and design: novel haptic interfaces for the generation of high quality surfaces for industrial design, The Visual Computer Journal, Springer Berlin / Heidelberg, 0178-2789 (Print) 1432-2315 (Online), vol. 23, n. 3, March 2007.

### Conference publications

Huang, S., Ruscio, D., Ariansyah, D., Yi, J., & Bordegoni, M. (2017, July). Does the Familiarity of Road Regulation Contribute to Driving Violation? A Simulated Study on Familiar and Unfamiliar Road Intersections among Young Chinese Drivers. In: Stanton N. (eds) *Advances in Human Aspects of Transportation. AHFE 2017 International Conference on Applied Human Factors and Ergonomics* (Vol. 597, pp. 307-318). Springer. [https://link.springer.com/chapter/10.1007/978-3-319-60441-1\\_31](https://link.springer.com/chapter/10.1007/978-3-319-60441-1_31)

Monici D., Graziosi S., Ferrise F., Bordegoni M., Design of a smart alarm clock to foster sustainable urban mobility, ICED'17, Vancouver, Canada, 21-25 August 2017.

Bordegoni M., Carulli M., Rapid Prototyping products mapping live-data streams into tangible user interfaces, ICED'17, Vancouver, Canada, 21-25 August 2017.

Caruso G., Ruscio D., Ariansyah D., Bordegoni M., Driving simulator system to evaluate driver's workload using ADAS in different driving context, ASME 2017 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, IDETC/CIE 2017, Cleveland, Ohio, USA, August 6-9, 2017 (Best paper award).

Covarrubias M., Aruanno B., Bordegoni M., Rossini M., Molteni F., Immersive Virtual Reality System for treatment of phantom limb pain (PLP), ASME 2017 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, IDETC/CIE 2017, Cleveland, Ohio, USA, August 6-9, 2017.

Carulli M., Vitali A., Caruso G., Bordegoni M., Rizzi C., Cugini U., ICT technology for innovating the garment design process in fashion industry, ICoRD'17 Conference, Guwahati, India, 7-9 January 2017.

Bordegoni M., Carulli M., Shi Y., Demonstrating the effectiveness of olfactory stimuli on drivers' attention, ICoRD'17 Conference, Guwahati, India, 7-9 January 2017.

Camere S., Schifferstein H.N.J., Bordegoni M., Materializing experiential visions into sensory properties - The use of the Experience map, 10<sup>th</sup> International Conference on Design and Emotions, Amsterdam, 27-30 September, 2016 (Best paper award).

Bordegoni M., Carulli M., Shi Y., Investigating the use of smell in vehicle-driver interaction, ASME IDETC/CIE 2016, Charlotte, USA, August 21-24 2016.

Bordegoni M., Cugini U., Merging digital and physical-based design, ASME IDETC/CIE 2016, Charlotte, USA, August 21-24 2016.

Filippi S., Barattin D., Graziosi S., Ferrise F., Bordegoni M., A discussion on specifications and prototyping in designing for sustainable behaviour, ASME IDETC/CIE 2016, Charlotte, USA, August 21-24 2016.

Camere S., Bordegoni M., A lens on future products: an expanded notion of prototyping practice, DESIGN 2016 Conference, Cvttat, Dubrovnik, Croatia, 16-19 May, 2016.

- Covarrubias M., Rossini M., Caruso G., Samali G., Giovanzana C., Molteni F., Bordegoni M., Sound Feedback Assessment for Upper Limb Rehabilitation Using a Multimodal Guidance System, International Conference on Computers Helping People with Special Needs. ICCHP 2016, Linz, Austria. July 2016, pp.529-536
- Gallace A., Risso P., Covarrubias M., Bordegoni M., Using a small size olfactory device to affect people's taste of food: preliminary evidence.", International Conference: Multisensory Human Computer Interaction (CHI) 2016, San Jose, CA, USA. May 2016.
- Covarrubias M., Bordegoni M., Caruso G., Cugini U., Integration of technology for olfactory and gesture based interaction for VR applications, International Conference: Tools and Methods of Competitive Engineering (TMCE-2016), At Aix-en-Provence, France. May 2016.
- Covarrubias M., Bordegoni M., Caruso G., Cugini U, Reverse Engineering and Augmented Reality haptic interface for shape design, ICIDM2016, Auckland, NZ, January 2016.
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- Covarrubias M., Bordegoni M., Immersive VR for natural interaction with a haptic interface for shape rendering, 1<sup>st</sup> International Forum on Research and Technologies for Society and Industry (organized by IEEE Italy Section), Torino, Italy, 16-18 September 2015.
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- Camere S., Caruso G., Bordegoni M., Di Bartolo C., Mauri D., Pisino E., Form follows data - A method to support concept generation coupling Experience Design with Motion Capture, ICED'15, Milano, Italy, 27-30 July 2015.
- Graziosi S., Ferrise F., A. Costanzi, Bordegoni M., Designing multisensory feedback to make users behave in a more sustainable way, ICED'15, Milano, Italy, 27-30 July 2015.
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- Carulli M., Bordegoni M., Cugini U., Weibin D., A methodology for the analysis of the influence of odours on the users' evaluation of industrial products, International Conference on Research into Design – ICoRD '15, Bangalore, India, 7-9 January 2015,
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- Bordegoni M., Cugini U., Integration of haptics into the design - A designer oriented tool for virtual clay modelling, Proc. of Changing the Change, Design Visions, Proposals and Tools, An international conference on the role and potential of design research in the transition towards sustainability, Torino, 10-12 July 2008.
- Bordegoni M., Ferrise F., Ambrogio M., Caruso G., Bruno F., Caruso F., Environment based on Augmented Reality and interactive simulation for product design review, Eurographics Italian Chapter Conference 2008, Salerno, July 2008.
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- Bordegoni M., Ferrise F., Ambrogio M., Caruso G., Bruno F., Caruso F., Mixed Reality environment and interactive simulation for product design review, 20<sup>th</sup> European Modeling & Simulation Symposium – EMSS 2008, 17-19 September 2008.
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- Bordegoni M., Ferrise F., Shelley S., Alonso M.A., Hermes D., Sound and Tangible Interface for shape Evaluation and Modification, HAVE 2008 - IEEE International Workshop on Haptic Audio Visual Environments and their Applications, Ottawa, Canada, 12-14 October 2008.
- Bordegoni M., Cugini U., A multimodal and enactive interface for aesthetic shapes evaluation, Enactive 2008 Conference, Pisa, Italy, 19-21 November 2008.
- Covarrubias M., Bordegoni M., Cugini U., Antolini M., A 6-DOF haptic strip for representing and modifying the surface of virtual objects, CCIA2008, IV Convencion Cientifica de Ingenieria Y Arquitectura, Habana, Cuba, 1-5 December, 2008.
- Bordegoni M., Caruso G., Ferrise F., Giraudo U., A mixed environment for ergonomic tests: tuning of the stereo viewing parameters, Fifth Eurographics Italian Chapter Conference 2007, Trento (Italy), February 14-16, 2007, 127-134.
- Magrassi G., Bordegoni M., Product design, Reverse Engineering, Rapid Prototyping – A Case Study in Cutlery Production, Fifth Eurographics Italian Chapter Conference 2007, Trento (Italy), February 14-16, 2007, 231-234.
- Cugini U., Bordegoni M., Haptic interfaces for Virtual Shape Exploration in Industrial Design, 3D User Interfaces Symposium, March 10-14, 2007, Charlotte, North Carolina (USA).
- Cugini U., Bordegoni M., Colombo G., Modeling and validation of cars' conceptual design using haptic technologies, 11<sup>th</sup> EUROPEAN AUTOMOTIVE CONGRESS, EAEC Congress 2007, 30 May – 1 June 2007, Budapest, Hungary.
- Bordegoni M., Caruso G., Giraudo U., Ferrise F., Haptic control system of a tractor cabin, HCI International 2007, Beijing, China, 22-27 July 2007 (poster).
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- Bordegoni M., Covarrubias M., Direct Visuo-Haptic Display System Using a Novel Concept, IPT-EGVE Symposium 2007, 13th Eurographics Symposium on Virtual Environments, 10th Immersive Projection Technology Workshop, 15-18 July 2007, Weimar, Germany (poster session).
- Bordegoni M., Cugini U., Haptic interface for real-time evaluation and modification of shape design, ASME IDETC/CIE Conference, 4-7 September 2007, Las Vegas, Nevada.
- Mengoni M., Bordegoni M., Germani M., Virtual Reality Systems: a method to evaluate the applicability based on the design context, ASME IDETC/CIE Conference, 4-7 September 2007, Las Vegas, Nevada.
- Cugini U., Bordegoni M., Exploitation of manual skill for the generation of aesthetic shapes: a typical enactive approach, Proceedings of ENACTIVE/07, 4th International Conference on Enactive Interfaces, Grenoble, France, 19-22 November, 2007.

## 2.3 Keynote address, Invited Talk and Seminar

### Keynote address

- "The art and science of designing for User Experiences", ICoRD'17, Guwahati, January 10<sup>th</sup>, 2017.
- "From virtual prototypes to real AM3D products: the success of a novel method for product development", ICIDM2016 – International Conference on Innovative Design and Manufacturing, Auckland, January 2016.
- "How touch and smell enhance the realism of our virtual experiences", SALENTO AVR 2015, Lecce, August 2015.
- "Human factors in design validation of interactive devices", International workshop on Digital Design, Keio University, Tokyo, July 30 2004, and at Hokkaido University, Sapporo, July 2004

### Invited Talk

- Technology and Humans are becoming smarter, Forum Design & Innovation, 10th Biennial Design in Saint-Etienne, France, 22 March 2017
- Designing products for good user experiences, Kogakuin University, Japan, December 5 2016
- Virtual Prototyping for product development, Clemson University, Clemson, August 2016
- Using a small size olfactory device to affect people's taste of food: preliminary evidence, Multisensory Human Computer Interaction (CHI) 2016, San Jose, CA, USA, May 2016.
- The pipeline of smell and odours generation technology, CNRS, Grenoble, April 2016
- Virtual Prototyping for Design Optimization of Interactive Products, Hokkaido University, Sapporo, 11 December 2014.
- Simulation of multisensory experience, Keio University, Tokyo, 10 December 2014.
- Experiencing Products in a multisensory simulation environment, University of Delft, Delft, 17 October 2014.
- Tools and Methods for: Product Design, User Experience Design, Systematic Innovation, Autodesk, Toronto, 22 August 2014.
- Experiencing Products Emotions through virtual multisensory prototypes, IMALab Talks at Interpack, Dusseldorf (Germany), 8-14 May 2014 ([www.imalab.net](http://www.imalab.net)).
- User Experience and Emotions in Product Design, Doctoral Consortium at CHIItaly 2013, Trento, 16 September 2013 ( <http://ceur-ws.org/Vol-1065> ).
- User Experience and Emotions, IDC IIT Bombay, Mumbai, 22 June 2013.
- Evaluation of product concept design of interactive products using Virtual Prototyping, Department of Mechanical Engineering, The Hong Kong University of Science and Technology, Hong Kong, 7 September 2012.
- Evaluation of product concept design of interactive products using Virtual Prototyping, Center for Innovation through Visualization and Simulation, Purdue University - Calumet , 11 November 2011.
- Workshop on Challenging the Triangle: Engineering, Culture and Experience, ASME IDETC/CIE Conference, San Diego, CA, USA, 30 September 2009 (title of the talk: "Exploiting Users skills and dexterities in Engineering")
- MITH 2008 - Workshop on Multimodal Interaction Through Haptic Feedback, 31 May 2008, Naples (title of the talk: "Multimodal interaction, Haptics, Illusions")

## 3. RESEARCH PROJECTS

### Principal Investigator on grants

- scientific coordinator of the NUVOLE - NUovi processi Volti alla costruzione di Oggetti Leggeri ed Ergonomici in composito e titanio project, 2017-2019 (funded by Regione Lombardia)
- coordinator of Alta Scuola Politecnica – ASP Project, FoodMade4U, Challenging 3D food printing, in collaboration with Barilla
- donation from Nokia on *digiscented affective message system*, 2014 – (project grant: k€10)
- grant from Luxottica on *novel digital technology for the optimization of the design process in sunglass industry*, 2014 – (project grant: k€150)
- grant from Bombardier on *Virtual prototyping for the testing of trains cockpit*, 2013 – (project grant: k€50)
- grant from Siemens on *multi-touch and Augmented Reality techniques in surveillance applications*, 2011 – (project grant: k€40)

- coordinator of the European project FP6-IST *SATIN - Sound And Tangible Interfaces for Novel product design*, www.satin-project.eu, 2006-2009 (total value of the project is k€ 1.676)
- coordinator of the national project MIUR-FIRB *PROGIMM – Tools for immersive product design* funded by the Ministry of Research, www.kaemart.it/progimm, 2007-2010 (total value of the project is k€818)
- coordinator of the national project MIUR PRIN2006 *PUODARSI – User-oriented product development based on Augmented Reality and interactive simulation*, 2006-2007 (total value of the project is k€ 250,00)
- coordinator of the national project MIUR-COFIN2001 *Study and development of a model and of an integrated environment knowledge-based for innovation processes*, 2002-2003

#### Researcher on grants

- participation to the TEINVEIN: TEcnologie INnovative per i VEicoli INTelligenti project
- participation to the *AddMe Lab* project, 2016-2018 (funded by Regione Lombardia – creativity, grant: k€76,00)
- participation to *Technology for Ambient Assisted Living Cluster* project, 2014-2017 (funded by the Italian Ministry of Research, grant: k€800,00)
- participation to *Smart Manufacturing Cluster* project, 2015-2017 (funded by the Italian Ministry of Research, grant: k€ 100,00)
- participation to *Ability* project (Telerehabilitation: Integrated platform Enabling the Remote Delivery and control of physical and cognitive Rehabilitation), 2014-2015 (funded by the Lombardia Region, grant: k€ 100,00)
- participation to *Vis4Factory (Visual Information system for factory)* project, 2012-2015 (funded by PON programme, European funding for regional development, grant: k€ 350,00)
- participation to *TEXTRA* project, 2012-2015 (funded by PON programme, European funding for regional development, grant: k€300,00)
- participation to the Industria 2015 project – *Body Scan*, 2013-2015, coordinated by M31 SpA (funded by Italian Ministry for Economic Development, grant: k€ 400,00)
- participation to the Industria 2015 project – *GreenKitchen – Development of new domestic energy appliance*, 2011-2013, coordinated by Whirlpool (funded by Italian Ministry for Economic Development; grant k€ 800,00)
- participation to the Industria 2015 project – *DesignNET – The new frontier of the Made In Italy design contract*, 2011-2013 (funded by Italian Ministry for Economic Development)
- deputy coordinator of the European project FP6-IST *TnD - Touch and Design*, www.kaemart.it/touch-and-design, 2003-2006 (total value of the project is k€ 1.594,00)
- coordinator of activities of the local research group in the FP6-IST *VIVACE (Value Improvement through a Virtual Aeronautical Collaborative Enterprise)* project, 2004-2007 (grant k€ 346)
- participation as researcher of the local research group in the European funded *NoE INTEROP – Interoperability Research for Networked Enterprises Applications and Software*, 2003-2007, www.interop-noe.org (grant k€69)
- participation as researcher of the local research group in the European funded *TACIT* project, 1998-2002 (total grant of these projects was k€620)

## **4. THESIS/DISSERTATION CHAIRED**

### **4.1 Graduate Students Advised**

2004- twenty M.Sc in Mechanical Engineering and in Design graduate students advised

2001- tutor of 15 PhD theses:

De Angelis Franco, *Haptic Rendering and NRM Simulation*, PhD in Engineering Production, Università, di Parma (11/97-03/01)

Rossella Mana, *Processo di realizzazione di capi di abbigliamento basato su strumenti di progettazione e simulazione virtuale*, PhD in Design and methods for product development, Politecnico di Milano (11/02 - 03/06)

Umberto Giraudo, *Methods and technologies for supporting the virtual concept and validation of vehicles*, PhD in Design and methods for product development, Politecnico di Milano (11/03 – 03/07) → professor at the British Higher School of Art & Design, Moscow

- Francesco Ferrise, *Multimodal Interaction in the Aesthetic Product Design*, PhD in Design and methods for product development, PhD in Design and methods for product development, Politecnico di Milano (11/04 - 03/09) → Associate Professor at PoliMI
- Paolo Belluco, *Design and development of wearable computer interfaces*, PhD in Design and methods for product development, Politecnico di Milano (11/07 - 03/11) → Co-founder of B10NIX.
- Michele Antolini, *The use of haptic devices for conveying information*, PhD in Design, Politecnico di Milano (11/08 – 03/12) → PostDoc fellow at Washington State University, Vancouver, USA; Milestone (Italy).
- Marco Ambrogio, *3D Audio Rendering in Virtual Prototyping of Industrial Products*, PhD in Design, Politecnico di Milano (11/08 – 11/12)
- Secil Ugur, *The social skin*, PhD in Design, Politecnico di Milano (11/08 – 03/12)
- Elia Gatti, *Feel and Sense the Product - Emotion and perception evaluation for product development*, PhD in Design, Politecnico di Milano (1/10 – 03/14) → research assistant at the CNCR - Centre for Computational Neuroscience and Cognitive Robotics, UK
- Alessandro Mansutti, *Haptics for virtual surface rendering*, PhD in Design, Politecnico di Milano (1/11 – 11/14) → Rold
- Zhao Jing, *Analysis of human behaviour in case of simulated critical events*, PhD in Design, Politecnico di Milano (1/12 – 1/15) → Beiang University
- Serena Camere, *Quality perception of industrial product*, PhD in Design, Politecnico di Milano (11/12 – 03/16) → TUDelft
- Aurelio Montalto, *New tools for the optimization of design process in sunglasses industry (Luxottica)*, PhD in Mechanical Engineering, Politecnico di Milano (11/14 - )
- Ding Weibin, *Olfactory Display for Multisensory Interaction*, PhD in Mechanical Engineering, Politecnico di Milano (11/14 - )
- Dedy Ariansyah, *VR driving simulator for the analysis of driving experience*, Politecnico di Milano (11/14 - )
- Yuan Shi, *Vehicle on-board emotional intelligence*, Politecnico di Milano (11/16 - )

## 5. TEACHING

### 5.1 Courses taught

- |           |   |
|-----------|---|
| 2003-     | <i>Virtual Modeling of Products</i> , B.Sc., School of Design (Fashion Design), Politecnico di Milano   |
| 2003-     | <i>Virtual Prototyping</i> , M.Sc., School of Design (Design and Engineering), Politecnico di Milano  |
| 2004-     | <i>Product Development Tools</i> , B.Sc., School of Design (Interior Design), Politecnico di Milano   |
| 2006-     | <i>Virtual Prototyping</i> , M.Sc., School of Industrial and Information Engineering (Mechanical Engineering), Politecnico di Milano  |
| 2014-     | Product Development Design Studio, M.Sc, School of Design (Design and Engineering), Politecnico di Milano   |
| 2010-2014 | Product Lifecycle Management / Computer Aided Design and Virtual Prototyping, School of Industrial and Information Engineering (Systems Engineering), Politecnico di Milano |
| 2005-2008 | <i>Methods for modeling and simulation of product development processes</i> , M.Sc., Faculty of Industrial Engineering, Politecnico di Milano                               |
| 2004-2006 | <i>Methods and techniques for interacting with virtual prototypes</i> , M.Sc., Faculty of Industrial Engineering, Politecnico di Milano                                     |
| 2002-2004 | <i>Computer Aided Design</i> , B.Sc., Faculty of Industrial Engineering, Politecnico di Milano  |
| 2001-2003 | <i>Technical Drawing</i> , B.Sc., Faculty of Industrial Design, Politecnico di Milano   |
| 1995-1998 | <i>Laboratory of Computer Graphics</i> , Faculty of Informatics, Politecnico di Milano  |
| 1994-2004 | <i>Computer Graphics</i> , B.Sc., Faculty of Informatics, Università di Parma   |
| 1998-2002 | <i>Geometric Modeling</i> , M.Sc., Faculty of Industrial Engineering, Università di Parma   |

### 5.2 Short Courses / Tutorials / Workshops / Summer Schools

#### Short courses

- Virtual Prototyping: technologies, Summer School on Virtual prototyping, Politecnico di Milano, 12-16 July 2016.

- Virtual Prototyping for product design and evaluation: case studies, Summer School on Virtual prototyping, Politecnico di Milano, 13-17 July 2015.
- Virtual Prototyping methodology for product design and evaluation, Summer School on Virtual prototyping, Politecnico di Milano, 14-18 July 2014.
- Techniques for representation, prototyping and test, Cefriel, Milano, 2012, 2013
- Technology driven innovation: Virtual Prototyping, ICE technology Award – training course, School of Management, Politecnico di Milano, 2011.
- Haptics applications, TMCE Conference, Ancona, 2010.
- Augmenting Video Images with 3D Virtual Objects (AR applications), VISMAL – XII School on Machine Vision, Catania, 2010.
- Virtual Prototyping to anticipate product shapes and functions, Summer School on Virtual prototyping, Politecnico di Milano, 21-24 September 2010.
- The future of digital design and prototyping of components, Innovative Design and Construction Technologies, Multi-disciplinary course of the PhD School, Politecnico di Milano, 18 March 2010 (6 hours)
- Virtual Prototyping methodology for product design and evaluation, Summer School on Virtual prototyping, Politecnico di Milano, 7-10 July 2009.
- Tools for design: from barriers to enablers of creativity, International Summer School on Theories of creative design, Gargnano del Garda, 2009.
- Haptic devices: expanding the limits of virtual prototyping, RTT event, Milano, 2009.

### Workshops

#### **Organizer of DesignSociety SIG-Emotional Engineering Workshops:**

- “Product Customization in pursuit of the Hedonic Value”, at the ICoRD’17 conference in Guwahati, India on January 10<sup>th</sup>, 2017.
- “Emotion in the Era of creating Experience”, at the DESIGN 2016 Conference, Dubrovnik, Croatia, 16 May 2016.
- “Creating Life beyond Products” at the ICED2015 conference in Milano, Italy on July 27<sup>th</sup>, 2015.
- “Emotional Engineering the Digitalization Age” at the ICoRD’15 conference in Bangalore, India on January 9<sup>th</sup>, 2015.
- “Designing Products for Lifetime Perceived Value” at the DESIGN 2014 conference in Dubrovnik, Croatia on May 19<sup>th</sup>, 2014.
- “Research on Emotional Engineering – Why Emotional Engineering” at the Arts & Metiers ParisTech, Paris, France, on July 5<sup>th</sup> 2013.
- “Emotional Engineering”, CAD Conference 2013, Bergamo, 19 June 2013.
- “Emotional Engineering”, Workshop, Milano, 19 November 2012.

#### **Organizer of Workshops @PoliMI:**

From Mind to Reality, School of Design, 2016, <http://www.polifactory.polimi.it/from-mind-to-reality.html>,  
<http://www.densitydesign.org/2016/05/from-mind-to-reality-workshop/>

### Summer Schools

#### **Organizer of International Summer School on Virtual Prototyping @PoliMI:**

- 7<sup>th</sup> Edition, 11-15 July 2016 ([www.kaemart.it/2016summerschool/](http://www.kaemart.it/2016summerschool/))
- 6<sup>th</sup> Edition, 13-17 July 2015 ([www.kaemart.it/2015summerschool/](http://www.kaemart.it/2015summerschool/))
- 5<sup>th</sup> Edition, 18-22 July 2014 ([www.kaemart.it/2014summerschool/](http://www.kaemart.it/2014summerschool/))
- 4<sup>th</sup> Edition, 15-19 July 2013 ([www.kaemart.it/2013summerschool/](http://www.kaemart.it/2013summerschool/))
- 3<sup>rd</sup> Edition, 16-20 July 2012 ([www.kaemart.it/2012summerschool/](http://www.kaemart.it/2012summerschool/))
- 2<sup>nd</sup> Edition, 21-24 July 2010
- 1<sup>st</sup> Edition, 07-10 July 2009

### **5.3 Laboratories**

- 2016- member of the scientific board of ED-Lab (Lab for Environmental Design and Multisensory Experience), Politecnico di Milano
- 2016- member of the scientific board of AddMe.Lab, Dipartimento di Meccanica, Politecnico di Milano (<http://www.addmelab.polimi.it>)
- 2015- member of the scientific board of POLIfactory Lab, Politecnico di Milano



- (www.polifactory.polimi.it)
- 2015- member of the scientific board of the I.DRIVE lab - Interaction between Driver Road-Infrastructure Vehicles and Environment, Politecnico di Milano (www.idrive.polimi.it)
  - 2008- coordinator of the Virtual Prototyping Lab, Department of Mechanical Engineering, Politecnico di Milano (www.kaemart.it/labs/VP/VPLAB.html)
  - 2008- coordinator of the Haptics & Reverse Engineering Lab, Department of Mechanical Engineering, Politecnico di Milano (www.kaemart.it/labs/HAPRE/HAPRELAB.html)
  - 2008- coordinator of the Virtual Prototyping and Augmented Reality Lab, Department of Mechanical Engineering, Politecnico di Milano (www.kaemart.it/labs/VIPAR/VIPARLAB.html)

## 6. SERVICES

### 6.1 National/International Service

#### Member of PhD boards

- member of the academic board of the PhD in Design, Politecnico di Milano (2010 -)
- member of the academic board of the PhD in Mechanical Engineering, Politecnico di Milano (2012 -2013)
- member of the academic board of the PhD in Design and methods for product development, Politecnico di Milano (2001 - 2010)
- member of the academic board of the PhD in Production Engineering, Department of Industrial Engineering – Università di Parma (1998 - 2001)

#### PhD thesis defense in foreign Universities

- opponent in the doctoral committee at Blekinge University, Sweden, 2016 (candidate: Mikael Johnsson)
- member of the board for doctoral committee at Delft University of Technology, Delft, 2016 (candidate: Ruben Arnold Gerard Post)
- member of the board for doctoral committee at the University of Strathclyde, Glasgow, 2016 (candidate: Stefania Sansoni)
- member of the board for doctoral committee at Delft University of Technology, Delft, 2014 (candidate: Jouke Verlinden)
- external examiner for the Degree of Doctor of Philosophy at Ecole Nationale Supérieure d'Arts et Métiers, ParisTech, 2013 (candidate: Kerstin Bongard)
- external examiner for the Degree of Doctor of Philosophy at UST, Hong Kong, 2012 (candidate: Zeng Long)
- external examiner for a Degree of Doctor of Philosophy at the University of Nottingham, 2011 (Candidate: Jacqueline Hollowood)

#### PhD thesis defense in Italian Universities

- external examiner for the Degree of Doctor of Philosophy at the Università della Calabria, Rende, 2012
- external examiner for the Degree of Doctor of Philosophy at the Università Politecnica delle Marche, Ancona, 2011
- external examiner for the Degree of Doctor of Philosophy at the Università degli Studi di Parma, Parma, 2010

#### Member of Master boards

- member of the academic board of the Master in Product Life-cycle Management, MIP – School of Management - Politecnico di Milano (2003 - 2004)
- member of the academic board of the Master in Digital prototyping techniques for industrial design with a focus on plastic materials prototypes, Faculty of Design, Politecnico di Milano (2001 - 2002)

#### External Examiner

External examiner of the Integrated Product Development Master Programme at the University of Malta, Malta, 2015-2017.

Member of the Advisory Committee of the academic program of the School of Mechanical Engineering and Automation, Beihang University, Beijing, December 14-15 2015.

Member of steering and technical Committees

- elected member of the Advisory Board of the DesignSociety (2015-2017)
- Chair of the Executive Committee of the ASME-CIE (American Society of Mechanical Engineers - Computers and Information in Engineering) Division (2016/2017)
- Deputy chair of the Executive Committee of the ASME-CIE (American Society of Mechanical Engineers - Computers and Information in Engineering) Division (2015/2016)
- elected Member of the Executive Committee of the - CIE (American Society of Mechanical Engineers - Computers and Information in Engineering) Division (2012-2017) - [http://divisions.asme.org/cie/Executive\\_Committee.cfm](http://divisions.asme.org/cie/Executive_Committee.cfm)
- nominated founding member of the ASME Innovative Design Simulation Challenge (IDSC) Committee, 2013-
- nominated Co-chair of the DesignSociety Special Interest Group on Emotional Engineering (EE-SIG), 2012-
- elected Chairperson of the ASME-CIE VES (Virtual Environments and Systems) Technical Committee, 2012-2013
- founder of the Italian Chapter of EuroGraphics, 2001
- 2001-2008, chair person of the Italian Chapter of EuroGraphics
- member of the Steering Committee of "Centro di Competenza sulla Innovazione Sistemica – Competence Centre on Systematic Innovation" set up by Politecnico Innovazione Consortium (2008 - ).
- member of the technical committee for the INTEL Innovation & Design Award in the years 2003, 2005, 2007 (Milano).
- member of committees for the evaluation of candidates for researcher positions and Faculty positions (2007-).

Member of advisory boards and research project evaluation boards

*Advisory Boards*

- invited as expert to participate to the consultation on Creativity (DG CONNECT), Luxembourg 2016
- invited as expert to participate to the Workshop on ICT and Creativity (DG CONNECT - Communications Network, Content and Technology Creativity Unit), Brussels, 19 November 2012.
- selected and appointed by the European Commission as expert to assist in the concept refinement and candidate selection of FET Flagships, 28-29 April 2010.

*Evaluation boards (National)*

- appointed Member of the Group of Experts for the ANVUR (National Agency for the Evaluation of University and Research) evaluation of research quality 2011-2014.
- appointed Member of the board of research project evaluation, 2015-2016, for ASTER (Consortium for Innovation and Technology Transfer in Emilia-Romagna).

*Evaluation boards (European Commission)*

- appointed by the European Commission as evaluator of project proposals in HORIZON2020-Next-Generation Internet (DG Communication Networks, Content and Technology), June 2017
- appointed by the European Commission as evaluator of project proposals in European Research Council (ERC) Starting Grant 2016
- appointed by the European Commission as evaluator of project proposals in HORIZON2020-Robotics, Brussels/Luxembourg, June 2016.
- appointed by the European Commission as evaluator of project proposals in HORIZON2020-Robotics, Brussels, June 2015.
- appointed by the European Commission as evaluator of project proposals in HORIZON2020-Robotics, Creativity (call 1), Brussels, March 2014.
- appointed by the European Commission as evaluator of project proposals in HORIZON2020-Robotics, Cognitive Systems & Smart Spaces, Symbiotic Interaction (call 1), Brussels, March 2014.
- appointed by the European Commission as evaluator of project proposals in FET Open - XTrack (March-June 2013).
- appointed by the European Commission as evaluator of project proposals in ICT-Robotics, Cognitive Systems & Smart Spaces, Symbiotic Interaction (call 10), Brussels 24 February – 1 March 2013.
- appointed by the European Commission as evaluator of project proposals FP7-ICT FET Proactive 4: Human-Computer Confluence , Brussels, 2009.

- appointed by the European Commission as evaluator of project proposals in the ICT-FET - Future and Emerging Technologies area, since 1999.
- appointed by the European Commission – DG III as reviewer of projects in the Information Technologies - Multimedia Systems area, 1998-2001.
- appointed by the European Commission – DG III as evaluator of project proposals in the Information Technologies - Multimedia Systems area, 1997.
- appointed by the European Commission – DGIII as evaluator of project proposals in the Information Technologies - Integration in Manufacturing area, 1995.

#### *Evaluation boards (others)*

- K2-Centre of the Austrian Competence Centre Programme COMET, K2-Centre: Digital Mobility, Wien, May 2017.
- appointed as independent expert for the evaluation of proposals for the Fund for Scientific Research (F.R.S.-FNRS), Belgium, since 2011.
- appointed as international Peer-Reviewer for the evaluation of projects for the Georgia National Science Foundation (GNSF), since 2010.
- appointed as independent expert for the evaluation of proposals for the Austrian Science Fund (FWF), Vienna, September 2013.
- appointed as independent expert for the evaluation of proposals for the French National Research Agency (ANR), “Blanc programme”, March 2013.

#### *Review boards*

- Member of the review panel for the EU projects: FURNIT-SAVER, CREATIF, RAPID-MIX

#### *Member of thematic networks*

- member of the HCM-ERCIM Computer Graphics Network on the topic: Graphics and Knowledge Engineering, funded by the European Commission in the frame of the Human Capital and Mobility program, 1994-1996.
- member of the CIM-Europe Interest Group (CIM-Europe IG) on UIDE (User Interface Development Environment) funded by the European Commission in the frame of the Esprit-CIME, 1991-1993.

## **6.2 Department/University Services**

- 2011-2016 chair of the Scientific Board, Department of Mechanical Engineering, Politecnico di Milano.
- 2011- delegate of the Rector for research and education relations with universities in India, Politecnico di Milano.
- 2006-2010 member of the administrative board (Giunta di Dipartimento) of the Department of Mechanical Engineering, Politecnico di Milano.

## **6.3 Member of Editorial Boards**

Associate Editor of ASME Journal of Computing and Information Science in Engineering (JCISE) – 2016-2019 (<http://computingengineering.asmedigitalcollection.asme.org/journal.aspx>).

## **6.4 Conference organizations and Participation to Program Committees**

### **Conference/Program Chair – Co-Chair:**

- Conference Chair, ASME-CIE Conference, Charlotte, 21-24 August 2016.
- Conference Chair, DOS (Digital Olfaction Society) Conference, Milano, 23-24 May 2016.
- Program Chair, ASME-CIE Conference, Boston, 2015.
- Conference Co-Chair, DeSForM, Aesthetics of Interaction Conference, Milano, 13-17 October 2015
- Conference Chair of ASME-WinVR Conference (World Conference on Innovative Virtual Reality), Milano, 2011.
- Chair of the IMECE 2015 Track on Systems, Design and Complexity, Houston, 2015.
- Chair of Virtual Environments and Systems Symposium at ASME/IDETC CIE 2013, Portland, 4-7 August 2013.

- Co-chair of Virtual & Augmented Reality Track at the ASME-ISFA 2012 (International Symposium on Flexible Automation), St Louis, Missouri, 18-20 June 2012.
- Co-chair of Virtual Environments and Systems Symposium at ASME-CIE 2012, Chicago, 12-15 August 2012.
- Organizer of the Panel on CIE-VES Panel Session on “Low cost VR technology for industrial applications”, at ASME IDETC/CIE 2014 Conference, August 17-20, 2014, Buffalo, New York.
- Organizer of the Track on CAD, CAM and CAE at the ASME-IMECE Conference (International Mechanical Engineering Congress), San Diego, CA, November, 2013.
- Organizer of the Panel on CIE-VES Panel Session on Low cost VR technology for industrial applications, at ASME/IDETC CIE 2013, Portland, 4-7 August 2013.
- Organizer of the Summer School on Virtual Prototyping, Politecnico di Milano, 16-20 July 2013.
- Organizer of the Track on Design, Materials, and Manufacturing - Design Innovations, Methodologies and Philosophies at the ASME-IMECE Conference (International Mechanical Engineering Congress), Houston, Texas, 9-15 November, 2012.
- Organizer of the Summer School on Virtual Prototyping, Politecnico di Milano, 16-20 July 2012.
- Organizer of Workshop on Haptic Interaction Design, IEEE Haptics Symposium, Vancouver, Canada, 4-7 March 2012.
- Conference organiser of the second conference of Eurographics Italian Chapter, Politecnico di Milano, 2003.

#### **Member of Conference Program Committee**

- Member of the Program Committee of the 11<sup>th</sup> Conference on Interfaces and Human-Computer Interaction, Lisbon, Portugal, 21-23 July 2017.
- Member of the Scientific Committee of 1st International Conference on Meaningful Technology and Design (MTD'2017), to be held in Guimarães, Portugal, July, 2017.
- Member of the International Program Committee of the 6th International Conference on Research into Design (ICoRD 2017), Indian Institute of Technology Guwahati, Guwahati, 9-11 January 2017.
- Member of the conference Scientific Advisory Board, DESIGN 2016, 14<sup>th</sup> International Design Conference, Dubrovnik – Cavtat – Croatia, May 2016.
- Programme Committee Member, EuroHaptics 2016.
- Member of the Program Committee of Salento AVR 2016 – International conference on Augmented and Virtual Reality.
- Member of the Program Committee of AVI2016 Conference (International Working Conference on Advanced Visual Interfaces), Bari, 7-10 June 2016.
- Member of the Program Committee of Salento AVR 2015 – International conference on Augmented and Virtual Reality.
- Member of the Program Committee of EuroVR Conference 2015.
- Member of the Program Committee of ICED2015.
- Member of the Program Committee of ICoRD'15.
- Programme Committee Member, EuroHaptics 2014.
- Member of the conference Scientific Committee, 2nd International Conference on Science, Technology and Art Relations (STAR), Haifa, Israel, May 2014.
- International Organizing Committee – Europe, CAD conferences, since 2013
- Member of the conference Scientific Advisory Board, DESIGN 2014, 13<sup>th</sup> International Design Conference, Dubrovnik – Cavtat – Croatia, May 2014.
- Member of the conference Scientific Committee, Digital Heritage 2013 Conference, Marseille, France, November 2013.
- Host Committee member for the CAD 2013 Conference, Bergamo, 17-20 June 2013.
- International Scientific Committee member for VAST2012 (International Symposium on Virtual Reality, Archaeology and Cultural Heritage), Brighton, UK, 19-21 November 2012.
- Scientific Committee Member, 18<sup>th</sup> International Conference on Virtual Systems and Multimedia, VSMM 2012 ([www.vsmm2012.org](http://www.vsmm2012.org)).
- Programme Committee Member, Theory and Practice of Computer Graphics, TPTG212, <http://www.eguk.org.uk/TPCG12/committee/committee.htm>
- Programme Committee Member, EuroHaptics 2012.
- Programme Committee Member, IADIS Interfaces and Human Computer Interaction 2012 (IHCI 2012).

- Programme Committee Member, International Conference on Virtual Systems and Multimedia, 2012.
- Programme Committee Member, CIRP Design Conference 2012, Bangalore, 2012
- Program Committee, EuroGraphics Italian Chapter, since 2002
- Committee Member, IADIS International Conference IHCI 2011, 2013
- International program Committee, TMCE 2010, 2012
- International Program Committee of 19th IEEE International Symposium on Robot and Human Interactive Communication - RO-MAN, 2010, 2013
- Co-organiser of ASME/IDETC CIE – Emotional Engineering Session, 2010, 2011.
- Scientific Committee, IDDME-Virtual Concept, Product and Interaction Design Environments for the Future Track, Bordeaux, France, 2010
- International Program Committee, Concurrent Engineering - CE2010, Cracow, Poland, Poland, 2010
- Program committee, Theory and Practice of Computer Graphics '07 Conference, 2007
- Program committee, International workshop on haptic and tactile perception - HAPTEX'07, 2007
- Session organiser, *Post WIMP HCI*, HCI International 2001, New Orleans, USA, 2001
- Session organiser, Continuity in Future Computing Systems, I3 Spring Days Workshop, Porto, Portugal, 2001
- Organizing Committee, KIC-4, The 4<sup>th</sup> IFIP Working Group 5.2 - International Workshop on Knowledge Intensive CAD, Parma, Italy, 2000
- Organizing Committee, GEO-7, The 7<sup>th</sup> IFIP Working Group 5.2 – International Workshop on Geometric Modeling: Fundamentals and Applications, Parma, Italy, 2000
- Program Committee, VL'99 - IEEE Symposium on Visual Languages, Tokyo, Japan, 1999
- Session organizer, *Virtual Reality*, 1<sup>st</sup> International Conference on Applied Ergonomics (ICAE'96), Istanbul, 1996

## 6.5 Review Service

- reviewer of articles for scientific journals: Int J. of Computing & Information Science in Engineering, Computer Aided Design Journal, Computers & Graphics, Int J of Human-Computer Studies, Virtual Reality Journal, Advanced Engineering Informatics, Journal of Visual Languages and Computing, Multimedia Systems, International Journal of Design Creativity and Innovation
- papers review for IEEE RO-MAN, 2010, 2011, 2012
- paper review for Transactions on Haptics, 2011
- paper review for ICoRD, since 2011
- paper review for ICED, since 2011
- papers review for Concurrent Engineering, 2010
- papers review for ASME IDETC/CIE, since 2008
- papers review for ASME IMECE, since 2011
- papers review for TMCE since 2008
- papers review for HCI International since 2007
- papers review for Virtual Concept, 2008, 2010
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## 6.6 Society Memberships

- Member, Eurographics (since 2008)
- Member, ASME (since 2010)
- Member, Design Society (since 2012)
- Member, IEEE
- Member, ACM
- Member, DOS – Digital Olfaction Society (since 2014)

Milano, December 2017