Curriculum Vitae

Giandomenico Caruso

Associate Professor at the Department of Mechanical Engineering,
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SHORT BIO

Associate Professor at the Department of Mechanical Engineering of Politecnico di Milano, since December 2018. In 2009, he took the PhD degree in Virtual Prototyping and Real Products at Politecnico di Milano with the thesis: "Industrial product development using Mixed Prototyping". In 2005, he obtained the qualification to practice the profession of Engineer just after the Master Degree in Mechanical Engineering at Università della Calabria with the thesis: "Procedures development for the integration of 3D input devices in Unigraphics NX3 CAD System"

His main research field focuses on the development and the exploitation of emerging technologies related to Virtual and Augmented Reality to support the industrial products development.

He is author or co-author of more than 50 articles published on international peer-reviewed journals, indexed in Web of Science and/or Scopus databases, or presented in international peer-reviewed conferences, most of them organized by primary professional associations and publishers.

His teaching activities relate to the courses of the academic discipline "Design and Methods for Industrial Engineering – ING-IND/15". He is lecturer of the course CAD MODELS, at the School of Design, and METHODS OF TECHNICAL REPRESENTATION, at the school of Industrial and Information Engineering.

RESEARCH INTEREST

His research interest focuses on the development and the exploitation of emerging technologies related to Virtual and Augmented Reality to support the industrial products development. Collaterally, some of the achievements obtained in the industrial sector are extended to other fields, such as physical rehabilitation [IC6] [IC9] and Cultural Heritage [IC7] [IC13]. In the following, a short description of research activities with reference to the related publications.

Mixed Prototyping to support industrial product development.

Mixed Prototyping is a technique to create prototypes partially real and virtual, which enhances the simulation of functionalities and interactivity of final products. Adding a physical component to a Virtual Prototype constitutes an important element that affects the user's emotional state and hence the user-product interaction process, as demonstrated in this study [IC16]. The advantages of this technique have been further highlighted in a series of publication [J12], [IC36], [IC29] where it was defined the role that Mixed Prototyping can have during the development phases of industrial products. This study [IC28], for instance, describes a structured protocol to assess human's interaction

in the household appliances sector, while in [IC38] it has been defined another methodology for testing both aspects related to design and ergonomic validation. These theoretical hypotheses have been practically demonstrated with the studies described below.

Since 2008, he started the development of a car simulator, based on the Mixed Prototyping approach, for ergonomic assessment of driver's seat. Development and validation of the simulator are described in the following publications [J11], [J10], [IC24], [IC26], [IC21]. The same simulator in 2012 has been upgraded to support the development of a methodology for the validation of new interfaces for hydraulic excavators. This methodology has been developed in collaboration with the North Carolina Agricultural and Technical State University and validated through a study described in [J8].

Since 2015, the simulator has been further upgraded to perform analysis related to the physiological state of the driver. A description of the current version of the simulator is partially described in [IC3]. With this simulator, he started new researches in the field of the new Advanced Driving Assistant Systems (ADAS) and autonomous vehicle. In this study [J1], it was proposed an approach to help the design of new adaptive working modalities for ADAS, which can take into account the variations of driving condition. In [J2], instead, the simulator has been used to measure and evaluate the user's responses to the first-time use of eco-driving assisting technology in order to support the design of less-intrusive assistance devices but anyway able to foster the change of the driving style. The simulator is currently involved also in the research activities of iDrive (http://www.idrive.polimi.it/) Lab for the analysis and the modelling of the behavioural and physiological responses related to the interaction between driver, vehicle, infrastructure, and environment. The iDrive Lab aims at combining evaluation carried out onto the simulator with another carried out by using a real electric vehicle with same sensors in order to develop data collection and elaboration for future mobility challenges, as described in [IC4]. In addition, his research activities on Mixed Prototyping techniques are carried out within the context of the SPARK project (http://spark-project.net/) where he led the development of an ICT platform based on Spatial Augmented Reality that can support co-design sessions in the fields of product, interface and packaging design. The main functionalities of the platform with the correspondent most promising use scenarios are proposed and discussed in [IC1].

Development of systems for stereoscopic vision and interaction with virtual prototypes in Augmented Reality.

The research activity addresses two key aspects of Augmented Reality: visualization and interaction. The problem of visualizing three-dimensional environments in Augmented Reality concerns the difficulty of maintaining the right perspective of virtual objects in relation to the real objects that make up the scene. This difficulty arises from certain parameters, such as interpupillary distance, field of view, angle of parallax, which mainly depend on other factors such as the focus plane that varies according to what the user is observing. The result of this research led to the prototypal realization of a Video See-Through Head-Mounted display that allowed overcoming these problems, as described in [IC30]. Contemporarily, it has been investigated the possibility to integrate an effective system for the interaction, which is described in [IC27]. The integration of these two devices led to develop an Augmented Reality system to support the design review phase of industrial products, as described in [IC25]. In [J6], instead, has been described another system for stereoscopic vision and interaction with virtual prototypes in Augmented Reality, which has been conceived to allow a user to freely interact with virtual objects integrated in a real environment without the need to wear cumbersome equipment

Techniques for modelling and numerical simulations in Augmented Reality environments.

The research activity concerns the integration of modelling environments and simulation codes for structural and fluid-dynamic analyses to create a tool that allows real-time correlation between shape modification and engineering performance. The shape modifications can be performed with different interaction tools while the exploration of the results of the engineering analysis takes place through Augmented Reality tools. This research activity is described in [IC31], [IC19], [IC34].

PARTICIPATION IN RESEARCH PROJECTS

2018 – 2020 Participation in the preparation of the proposal and coordination of the local unit of the project PERVIVAL funded by Cariplo foundation. The project aims at developing an interactive system for the renewal of the current exhibition at the Archaeological Museum in Milan. His contribution relates to the coordination of the development activities of the entire system (Project Coordinator: Prof. Monica Bordegoni)

2017 – 2020 Participation in the research and development activities within the local project TEINVEIN (http://www.openinnovation.regione.lombardia.it/it/eng/casehistory-teinvein-eng). The goal of the project is the construction of a platform for the development of a fully autonomous vehicle. Here, ADAS systems (advanced driver assistance systems) monitor the psychological and physical state of the driver and passengers, obstacles and people on the road and make driving easier. His research activities relate the development of specific Virtual scenarios to support the development of the innovative sensors proposed in the project. (Project leader: STMICROELECTRONICS S.R.L.)

2015 – 2018 Participation in the preparation of the proposal, research and coordination of the European project H2020-ICT-19-2015-688417 SPARK Project (http://www.spark-project.net/). The SPARK project aims at analysing the collaborative and cognitive dynamics of creative team processes and at developing an ICT platform that exploits the potential of Spatial Augmented Reality to support creative and collaborative design. As leader of the Work Package 2, his research and coordination activities concerned the development of the ICT platform. (Project Coordinator: Prof. Gaetano Cascini).

2007 – 2010 Participation in research and development activities within the MIUR-FIRB – PROGIMM project (http://www.kaemart.it/progimm). The aim of the project was to create a distributed platform for the development and validation of prototypes in the automotive sector. His activities concerned the organization and overall coordination of the development of the platform. (Project Coordinator: Prof. Monica Bordegoni).

2007 – 2009 Participation in the research and development activities of the MIUR-COFIN – PUODARSI (http://www.kaemart.it/puodarsi). The aim of the project was to study and develop a virtual environment that allows designers to analyse, improve and optimize the performance of existing products thanks to the use of interactive numerical simulations. His activities within the project related the creation of a stereoscopic visualization system based on Augmented Reality and the data exchange protocol. (Project Coordinator: Prof. Monica Bordegoni).

2007 Participation in the research activities of the European project FP6-IST-5-034525 SATIN (http://www.satin-project.eu). The main objective of the project was to develop a system for modifying and exploring virtual objects through a multi-modal and multi-sensorial interface. HIs activities carried out concerned the analysis of three-dimensional visualization systems to be used within the project. (Project Coordinator: Prof. Monica Bordegoni).

2006 Participation in the research activities of the European project FP6-IST-2002-001996 Touch and Design (http://www.touch-and-design.eu). The aim of the project was to develop an innovative modelling system based on haptic devices. The activity carried out within the project involved the study of an immersive stereoscopic version of the visualization system. (Project Coordinator: Prof. Umberto Cugini)

LABORATORIES

Since 2015, he is one of the persons in charge of the i.Drive Lab - Interaction between Driver Road-Infrastructure Vehicles and Environment (http://www.idrive.polimi.it/). The lab involves three Departments of Politecnico di Milano (DABC, DEIB and DMECC) and aims at developing interdisciplinary skills necessary for the analysis and modelling of behavioural aspects due to the interaction between driver, vehicle, infrastructure and environment. His activities concern the development and management of the Virtual Reality simulator aimed at verifying indoor the driver's behavioural models in different context. (Main Responsible of the lab Prof. Lorenzo Mussone).

CONFERENCE ORGANIZATIONS

2018 Involvement in the organization of DCC 2018 (http://dccconferences.org/dcc18/) hosted by the Mechanical Department of Politecnico di Milano; Conference Chairs: Prof. John Gero and Prof. Gaetano Cascini

2015 Involvement in the organization of ICED 2015 (http://iced2015.org/) hosted by the Mechanical Department of Politecnico di Milano; Conference Chairs: Prof. Gaetano Cascini and Prof. Marco Cantamessa

2011 Member of the Local Organizing Committee of ASME World conference on Innovative Virtual Reality WINVR 2011 (www.asmeconferences.org/winvr2011/) hosted by the Mechanical Department of Politecnico di Milano; Conference Co-Chairs: Prof. Monica Bordegoni and Prof. James M. Ritchie

REVIEWING SERVICES

He is involved in the reviewing activities of the following International Journals: Springer - Virtual Reality, Elsevier - Automation in Construction, Taylor & Francis - Computer-Aided Design and Applications, Elsevier - Computer Standards & Interfaces, International Journal of Intelligent Engineering Informatics, ASME - Journal of Computing and Information Science in Engineering. In addition, He is usually involved in the reviewing process of the following international conferences: IEEE ISMAR, ASME WINVR, ASME IDETC, ASME IMECE, ICED.

HONOURS AND AWARDS

2017 Best Paper Award 2017 ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE), with the paper: “Driving Simulator System To Evaluate Driver’s Workload Using ADAS In Different Driving Contexts”

2017 Distinguished Paper ICoRD 2017, with the paper: “ICT technology for innovating the garment design process in fashion industry”

2016 Best Paper Award 2016 International Conference on Innovative Design and Manufacturing (ICIDM), with the paper: “Reverse Engineering and Augmented Reality Haptic Interface for Shape Design”

2009 RTT Emerging Technology Contest 2009, with the project: “Haptic Devices in Mixed-Reality Environment for Interior Car Design Evaluation”

TEACHING ACTIVITIES

His teaching activities relate to the courses of the academic discipline Design and Methods for Industrial Engineering – ING-IND/15. Following, the list of all teaching activities as Lecturer, Teaching Assistant and Seminars conducted since the 2005/2006 academic year.

AS LECTURER
- 2018-now – METHODS OF TECHNICAL REPRESENTATION (7 CFU), School of Industrial and Information Engineering
- 2016-now – CAD MODELS (6 CFU), School of Design
- 2010-2016 – CAD MODELS (5 CFU), School of Design
- 2009/2010 – PARAMETRIC MODELLING (5 CFU), School of Design

AS TEACHING ASSISTANT
- 2005-2018 – METHODS OF TECHNICAL REPRESENTATION, School of Industrial and Information Engineering
- 2005-2010 – CAD LAB, School of Industrial and Information Engineering

SEMINARS
- Yearly seminar on "Augmented Reality for industrial product development" in courses: VIRTUAL PROTOTYPING (Prof. Monica Bordegoni), School of Industrial and Information Engineering and School of Design | CAD LAB (Prof. Gaetano Cascini), School of Industrial and Information Engineering

THESIS SUPERVISION

Supervision or co-supervision of more than 20 students' thesis among Bachelor, Master and PhD.

PHD THESIS
- Yuan Shi, *User's behaviour studies for improving driving safety, comfort and experience,* (started in November 2016) [co-supervision]
- Federico Morosi, *Augmented reality technologies as support of collaborative design activities,* (started in November 2016) [co-supervision]
- Dedy Ariansyah, *Virtual Reality (VR) Driving Simulator for Analysis of Driver Behavior,* (2018) [co-supervision]

MASTERS THESIS
- Francesco Rechichi, *Design of a driving simulator suitable for the comfort evaluation of agricultural tractors*, (2017)
- Mirei Celine Ong, *The future of virtual retail. Design & development of mixed reality shoe configurators,* (2017) [co-supervision]
- Iacopo Carli, *Crear: Mixed Prototyping System for Packaging Design,* (2016)
- Federico Morosi, *Development and Evaluation of a New Haptic Interface for the Coordinated Control of Earthmoving Machine*, (2016)
- Alessandro Saffioti, *Analisi dello stile di Guida veicolare e delle emissioni di CO2*, (2016)
- Matteo Troiani, *Studio e applicazione della tecnica di cattura del movimento come strumento di supporto alla progettazione*, (2015) [co-supervision]
- Rany Tony Sharara, *Robot based metrological characterization of 3D imaging devices for design applications*, (2014) [co-supervision]
- Luca Puglia, *Tracciamento oculare 3d per sistema di visualizzazione semi-immersivo* (2010) [co-supervision]
- Riccardo Leoni, *Valutazione estetico funzionale di prodotti interattivi in realtà mista,*" (2010) [co-supervision]
- Arthur Carli, Fabrizio Ferrario, *Ambiente interattivo basato sulla realtà aumentata per simulazioni fluidodinamiche e strutturali,* (2008) [co-supervision]
- Elena Rescali, Leonardo Tedioli, *Progettazione, simulazione e analisi ergonomica del posto guida basate su un seating buck e su tecniche di Realtà Virtuale,* (2008) [co-supervision]
- Fabrizio Colombo, Guido Maria Re, *Sviluppo di un sistema immersivo di visualizzazione e interazione per il Design Review in Realtà Aumentata,* (2008) [co-supervision]

- Gianluca Balducci, *An application based on augmented reality for product evaluation,* (2007) [co-supervision]

PUBLICATIONS

He is author or co-author of 12 articles in international peer-reviewed journals, indexed in Web of Science and/or Scopus databases, such as Elsevier - International Journal of Industrial Ergonomics, Taylor & Francis - Virtual and Physical Prototyping, Taylor & Francis - Computer-Aided Design and Applications, ASME - Journal of Computing and Information Science in Engineering. In addition, he is author or co-author of 39 articles presented in international peer-reviewed conference most of them organized by primary professional associations and publishers: such as IEEE, ASME, Springer, SPIE. Finally, the following publication list includes technical reports he authored within his research activities in international research projects. His citation scores (last update 21-03-2019) are:

- Scopus: h-index: 7 | Indexed documents: 40 | Total citations: 168
- Google scholar (since 2014): h-index: 6 | Indexed documents: 53 | Total citations: 185

INTERNATIONAL JOURNALS

[J1] D. Ariansyah, **G. Caruso**, D. Ruscio, M. Bordegoni (2018) *Analysis of Autonomic Indexes on Drivers' Workload to Assess the Effect of Visual ADAS on User Experience and Driving Performance in Different Driving Conditions*, Journal of Computing and Information Science in Engineering 18(3), p. 1-11, ASME, doi:10.1115/1.4039313

[J2] D. Ruscio, **G. Caruso**, L. Mussone, M. Bordegoni (2018) *Eco-driving for the first time: The implications of advanced assisting technologies in supporting pro-environmental changes*, International Journal of Industrial Ergonomics 64(March), p. 134-142, Elsevier B.V, doi:10.1016/j.ergon.2018.01.009

[J3] M. Bordegoni, M. Covarrubias, **G. Caruso**, U. Cugini (2016) *Freehand Gesture and Tactile Interaction for Shape Design*, Journal of Computing and Information Science in Engineering 16(4), p. 1-7, ASME, doi:10.1115/1.4033230

[J4] A. Mansutti, M. Covarrubias Rodriguez, **G. Caruso**, M. Bordegoni, U. Cugini (2016) *Visuo-tactile system for 3D digital models rendering*, Computer-Aided Design and Applications 13(2), p. 236-245, Taylor & Francis, doi:10.1080/16864360.2015.1084196

[J5] **G. Caruso**, S. Camere, M. Bordegoni (2015) *System based on abstract prototyping and motion capture to support car interior design*, Computer-Aided Design and Applications 13(2), p. 228-235, Taylor & Francis, doi:10.1080/16864360.2015.1084194

[J6] **G. Caruso**, M. Carulli, M. Bordegoni (2014) *Augmented Reality System for the Visualization and Interaction with 3D Digital Models in a Wide Environment*, Computer-Aided Design and Applications 12(1), p. 86-95, Taylor & Francis, doi:10.1080/16864360.2014.949579

[J7] **G. Caruso**, G. M. Re, M. Carulli, M. Bordegoni (2014) *Novel Augmented Reality system for Contract Design Sector*, Computer-Aided Design and Applications 11(4), p. 389-398, Taylor & Francis, doi:10.1080/16864360.2014.881181

[J8] J. Akyeampong, S. Udoka, **G. Caruso**, M. Bordegoni (2014) *Evaluation of hydraulic excavator Human-Machine Interface concepts using NASA TLX*, International Journal of Industrial Ergonomics 44(3), p. 374-382, Elsevier Ltd, doi:10.1016/j.ergon.2013.12.002

[J9] F. Ferrise, **G. Caruso**, M. Bordegoni (2013) *Multimodal training and tele-assistance systems for the maintenance of industrial products*, Virtual and Physical Prototyping 8(2), p. 113-126, Taylor & Francis, doi:10.1080/17452759.2013.798764

[J10] M. Bordegoni, **G. Caruso** (2012) *Mixed reality distributed platform for collaborative design review of automotive interiors*, Virtual and Physical Prototyping 7(4), p. 243-259, Taylor & Francis, doi:10.1080/17452759.2012.721605

[J11] **G. Caruso** (2011) *Mixed Reality System for Ergonomic Assessment of Driver's Seat*, The International Journal of Virtual Reality 10(2), p. 69-79,

[J12] M. Bordegoni, U. Cugini, **G. Caruso**, S. Polistina (2009) *Mixed prototyping for product assessment: a reference framework*, International Journal on Interactive Design and Manufacturing (IJIDeM)

3(3), p. 177-187, Springer-Verlag, doi:10.1007/s12008-009-0073-9

CONFERENCE PROCEEDINGS

[IC1] L. L. Micoli, S. Gonizzi Barsanti, **G. Caruso**, G. Guidi (2019) *Digital Contents for Enhancing the Communication of Museum Exhibition: the Pervival Project*, ISPRS - International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences XLII-2/W9(February), p. 487-493, doi:10.5194/isprs-archives-xlii-2-w9-487-2019

[IC2] F. Morosi, I. Carli, **G. Caruso**, G. Cascini, V. Dhokia, F. Ben Guefrache (2018) *Analysis of co-design scenarios and activities for the development of a Spatial-Augmented Reality design platform*, Proceedings of the DESIGN 2018 15th International Design Conference, p. 381-392, doi:10.21278/idc.2018.0504

[IC3] **G. Caruso**, D. Ruscio, D. Ariansyah, M. Bordegoni (2017) *Driving Simulator System to Evaluate Driver's Workload Using ADAS in Different Driving Contexts*, Volume 1: 37th Computers and Information in Engineering Conference, p. V001T02A066, ASME, doi:10.1115/DETC2017-67850

[IC4] D. Ruscio, L. Bascetta, A. Gabrielli, M. Matteucci, D. Ariansyah, M. Bordegoni, **G. Caruso**, L. Mussone (2017) *Collection and comparison of driver/passenger physiologic and behavioural data in simulation and on-road driving*, 5th IEEE International Conference on Models and Technologies for Intelligent Transportation Systems (MT-ITS), p. 403-408, IEEE, doi:10.1109/MTITS.2017.8005705

[IC5] M. Carulli, A. Vitali, **G. Caruso**, M. Bordegoni, C. Rizzi, U. Cugini (2017) *ICT Technology for Innovating the Garment Design Process in Fashion Industry*, Proceedings of International Conference on Research into Design (ICoRD 2017), p. 525-535, doi:10.1007/978-981-10-3518-0_46

[IC6] F. Molteni, C. Gramigna, S. Canobbio, M. Peverelli, S. Aggujaro, M. Rossini, G. Palumbo, **G. Caruso**, M. Covarrubias (2017) *Tele-Rehabilitation Platform for Upper and Lower Limb in Elderly Patients , the HEAD Project*, eTELEMED 2017, The Ninth International Conference on eHealth, Telemedicine, and Social Medicine, p. 117-122.

[IC7] S. Gonizzi Barsanti, **G. Caruso**, G. Guidi (2016) *Virtual navigation in the ancient Egyptian funerary rituals*, 2016 22nd International Conference on Virtual System & Multimedia (VSMM), p. 1-6, IEEE, doi:10.1109/VSMM.2016.7863148

[IC8] M. Covarrubias, M. Bordegoni, **G. Caruso**, U. Cugini (2016) *Integration of Technology for Olfactory and Gesture Based Interaction for VR Applications*, Proceedings of TMCE 2016, p. 1-9

[IC9] M. Covarrubias Rodriguez, M. Rossini, **G. Caruso**, G. Samali, C. Giovanzana, F. Molteni, M. Bordegoni (2016) *Sound Feedback Assessment for Upper Limb Rehabilitation Using a Multimodal Guidance System*, Proceedings of International Conference on Computers Helping People with Special Needs ICCHP 2016, p. 529-536, doi:10.1007/978-3-319-41267-2_74

[IC10] M. Covarrubias, M. Bordegoni, **G. Caruso**, U. Cugini (2016) *Reverse Engineering and Augmented Reality Haptic Interface for Shape Design*, Proceedings of International Conference on Innovative Design and Manufacturing, p. 1-9

[IC11] M. Bordegoni, S. Camere, **G. Caruso**, U. Cugini (2015) *Body Tracking as a Generative Tool for Experience Design, Proceedings of 5th International Conference*, DHM 2014 8529, Vincent G. Duffy (ed.), p. 122-133, Cham: Springer International Publishing, doi:10.1007/978-3-319-07725-3

[IC12] S. Camere, **G. Caruso**, M. Bordegoni, C. Di Bartolo, D. Mauri, E. Pisino (2015) *Form follows data: a method to support concept generation coupling experience design with motion capture*, Proceedings of the 20th International Conference on Engineering Design (ICED15)(July), p. 135-144

[IC13] S. Gonizzi Barsanti, **G. Caruso**, L. L. Micoli, M. Covarrubias Rodriguez, G. Guidi (2015) 3D *Visualization of Cultural Heritage Artefacts with Virtual Reality devices*, Proceedings of ISPRS - International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences XL-5/W7(1), p. 165-172, doi:10.5194/isprsarchives-XL-5-W7-165-2015

[IC14] G. M. Re, **G. Caruso**, M. Bordegoni (2013) *Augmented Reality interactive system to support space planning activities, in Proceedings of Virtual*, Augmented and Mixed Reality. Systems and Applications 8022, Randall Shumaker (ed.), p. 291-300, Berlin, Heidelberg: Springer Berlin Heidelberg, doi:10.1007/978-3-642-39420-1

[IC15] **G. Caruso**, S. Polistina, M. Bordegoni (2013) *Simple Measurement and Annotation Technique of*

Real Objects in Augmented Reality Environments, Volume 2B: 33rd Computers and Information in Engineering Conference, p. V02BT02A034, ASME, doi:10.1115/DETC2013-12603

[IC16] E. Gatti, **G. Caruso**, M. Bordegoni, C. Spence (2013) *Can the feel of the haptic interaction modify a user's emotional state?*, in Proceedings of 2013 World Haptics Conference (WHC), p. 247-252, IEEE, doi:10.1109/WHC.2013.6548416

[IC17] G. M. Re, **G. Caruso**, P. Belluco, M. Bordegoni (2012) *Hybrid Technique to Support the Tracking in Unstructured Augmented Reality Environments*, Volume 2: 32nd Computers and Information in Engineering Conference, Parts A and B, p. 1361-1370, ASME, doi:10.1115/DETC2012-70651

[IC18] **G. Caruso**, E. Gatti, M. Bordegoni (2011) *Study on the Usability of a Haptic Menu for 3D Interaction*, in Proceedings of Human-Computer Interaction INTERACT 2011 6947, Pedro Campos, Nicholas Graham, Joaquim Jorge, Nuno Nunes, Philippe Palanque, Marco Winckler (ed.), p. 186-193, Springer Berlin / Heidelberg, doi:10.1007/978-3-642-23771-3_15

[IC19] F. Ferrise, M. Bordegoni, M. Ambrogio, **G. Caruso** (2011) *AR Application for Pre-Post Processing in Engineering Analysis for Non-Expert Users*, in Proceedings of the 3rd International Conference on Research into Design Engineering, p. 259-266

[IC20] **G. Caruso**, M. Bordegoni (2011) *A Novel 3D Interaction Technique Based on the Eye Tracking for Mixed Reality Environments*, Volume 2: 31st Computers and Information in Engineering Conference, Parts A and B, p. 1555-1563, ASME, doi:10.1115/DETC2011-48288

[IC21] **G. Caruso**, S. Polistina, M. Bordegoni, M. Aliverti (2011) *Collaborative Mixed-Reality Platform for the Design Assessment of Cars Interior,* in Proceedings of Virtual and Mixed Reality - Systems and Applications 6774, Randall Shumaker (ed.), p. 299-308, Springer Berlin / Heidelberg, doi:10.1007/978-3-642-22024-1_33

[IC22] **G. Caruso**, S. Polistina, M. Bordegoni (2011) *Collaborative Mixed-Reality Environment to Support the Industrial Product Development*, in Proceedings of ASME 2011 World Conference on Innovative Virtual Reality, p. 207-215, ASME, doi:10.1115/WINVR2011-5540

[IC23] G. M. Re, **G. Caruso**, P. Belluco, M. Bordegoni (2010) Monitor-Based tracking system for Wide Augmented Reality Environments, in Proceedings of Eurographics Italian Chapter Conference 2010, p. 153-158, doi:10.2312/LocalChapterEvents/ItalChap/ItalianChapConf2010/153-158

[IC24] **G. Caruso**, L. Tedioli (2010) Mixed reality seating buck system for ergonomic evaluation, in Proceedings of TMCE 2010 Symposium 1, p. 511-524

[IC25] **G. Caruso**, G. M. Re (2010) Interactive augmented reality system for product design review, in Proceedings of SPIE 7525, The Engineering Reality of Virtual Reality 2010 7525(1), Ian E. McDowall, Margaret Dolinsky (ed.), p. 75250H, SPIE-The International Society for Optical Engineering., url, doi:10.1117/12.840261

[IC26] **G. Caruso**, P. Belluco (2010) Robotic arm for car dashboard layout assessment in Mixed Reality environment, in Proceedings of 19th International Symposium in Robot and Human Interactive Communication, p. 62-68, IEEE, doi:10.1109/ROMAN.2010.5598685

[IC27] **G. Caruso**, G. M. Re (2010) AR-Mote: A wireless device for Augmented Reality environment, in Proceedings of 2010 IEEE Symposium on 3D User Interfaces (3DUI), p. 99-102, IEEE, doi:10.1109/3DUI.2010.5444714

[IC28] M. Mengoni, M. Peruzzini, F. Mandorli, M. Bordegoni, **G. Caruso** (2009) Performing ergonomic analysis in virtual environments: A structured protocol to assess humans interaction, 2008 Proceedings of the ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conference, DETC 2008 3(PART B)

[IC29] M. Bordegoni, U. Cugini, **G. Caruso**, S. Polistina (2009) The Role of Mixed Prototyping in Product Design Assessment, in Proceedings of the 2nd International Conference on Research into Design, p. 427-434, url

[IC30] **G. Caruso**, U. Cugini (2009) Augmented Reality Video See-through HMD Oriented to Product Design Assessment, in Proceedings of International Conference on Virtual and Mixed Reality (VMR), p. 532-541, Springer Berlin / Heidelberg, doi:10.1007/978-3-642-02771-0_59

[IC31] M. Bordegoni, F. Ferrise, M. Ambrogio, **G. Caruso**, F. Bruno, F. Caruso (2008) Mixed Reality environment and interactive simulation for product design review, in Proceedings of 20th European Modeling & Simulation Symposium & Simulation Symposium(c)

[IC32] M. Mengoni, M. Peruzzini, F. Mandorli, M. Bordegoni, **G. Caruso** (2008) Performing Ergonomic

Analysis in Virtual Environments: A Structured Protocol to Assess Humans Interaction, Volume 3: 28th Computers and Information in Engineering Conference, Parts A and B, p. 1461-1472, ASME, doi:10.1115/DETC2008-49160

[IC33] R. Viganò, G. O. Gómez, **G. Caruso** (2008) Aplicación de la realidad aumentada y modelos virtuales para la validación de montajes, in Proceedings of 20 Congreso Internacional de Ingenierìa Grafica INGEGRAF

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