

# ***Curriculum vitae et studiorum***

VALENTINA CAMOMILLA

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## **BUSINESS ADDRESS**

Laboratory of Bioengineering of the Locomotor Apparatus  
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## **Personal Information**

Place of Birth: Roma  
Date of Birth: January, 28th 1973  
Citizenship: Italian

## **Education**

° Master of Science in Electronic Engineering at the University of Rome, "La Sapienza", June 2000. *"Posturographic signal analysis for the assessment of the effects of the mechanical internal perturbations due to emodinamics"*. supervisor Prof. Tommaso D'Alessio. 110/110 cum laude.

° Doctor of Philosophy in Bioengineering at the University of Bologna, April 2004. *"High resolution human movement analysis"*. In collaboration with the Department of Human Movement and Sport Sciences (DiSMUS) of the University of Rome "Foro Italico" (IUSM), supervisor Prof. Aurelio Cappozzo.

## **Current Position**

2006 - present: Assistant Professor of Electronic and informatics bioengineering at the Department of Movement, Human and Health Sciences of the University of Rome "Foro Italico".  
September 2019 - present: Vice-Director of the Interuniversity Centre of Bioengineering of the Human Neuromusculoskeletal System at the University of Rome "Foro Italico".

## **Previous Positions**

May 2016 – March 2019: Director of the Interuniversity Centre of Bioengineering of the Human Neuromusculoskeletal System at the University of Rome "Foro Italico".

- ° Dec 2004 – Dec 2005: Post Doc “*High resolution 3D human movement analysis*”, University of Rome “Foro Italico” (named IUSM), Italy.
- ° Jan 2001 – Mar 2004: PhD student at the Bioengineering Laboratory at University of Rome “Foro Italico” (named IUSM), Rome, Italy.
- ° Oct 1998 – Jan 2001: University of Roma3 (Rome, Italy). Posturographic signal analysis for the assessment of the effects of the mechanical internal perturbations due to emodinamics.

## Research Interests

Previous and current research concerns increasing the resolution of human movement analysis, performed using stereophotogrammetry [5,6]. The principal sources of error in this context are addressed: the relative movement within skin and bone (soft tissue artifact, [5,8-12,15-18,21-23,24,30,a1,a3-a4,a24,a25,a37,a39,a40]) and the inaccuracy in anatomical landmark identification [36-38,a9]). Among the landmarks of interest, particular attention is devoted to the identification of the hip joint centre [20,26,35,36,39,41,a60]. Reduction of soft tissue artifact effects on inverse dynamics is pursued using an appropriate knee modelling, which requires the analysis of key elements such as ligaments attachment sites and lengths [12,29,a29] or knee joint stiffness [13, a33].

Different studies have been performed at a methodological or applied level using wearable devices, to move a reliable quantification of critical biomechanical features of the performance from the laboratory to the field, both in the clinical [2,30,40,43,44,n1,c2,a23] and sport domains with special focus on sport performance analysis [3,4,27,28,31,32,a22,a29]. The reliability of inertial sensors and their possibility to provide useful performance information have been tested for cricket [3,a28], vertical jump [31], and for American football [a46], during forehand strokes in tennis [a8], and, in the context of national and international collaborations, to assess key parameters during sprint start and maintenance [27,28,a6]. These sensors have also been used to contribute to Paralympic classification of motor impaired individuals performing clay target shooting [a18,a26,a27,a30] and to provide parameters to describe occupants safety during road restrain barrier crash testing [1] and as safety feedback during squat with overweights [n3,a56]

Various neuromechanical studies have also been carried out, in collaboration with the Exercise Physiology Lab of my University, to explore how the nervous system controls the actions of muscles during during different Karate kicks [13,19,24,26,32] and during an aerial technique included in the Kata in elite karateka [33] and during gymnastics [n2].

## Research Grants as local or principal coordinator

- ° 2019 – 2020 Defense Ministry (PNRM 2019): “Rischio di danno dell’apparato muscoloscheletrico in relazione a fattori biologici, ambientali e comportamentali ed in associazione al livello di vitamina D: toolkit di valutazione, monitoraggio e predizione. (MOtion and Vitamin D Assessment)”. (National Coordinator Claudia Giacomozzi).
- ° 2018 Italian Ministry of University “Ministero dell’Istruzione, dell’Università e della Ricerca (MIUR)” Fondo per il Finanziamento dell’Attività di Base della Ricerca – Euro 3,000.
- ° 2016 – 2017 University Foro Italico Competitive Grant: Two years project. Scientific coordinator and post-doc supervisor. “HEAL2TOE: Towards a HEALTHy locomotor development in idiopathic TOE-walking, kinematic and kinetic analysis and assessment of a novel orthosis” - Euro 34,535.

- ° 2014 – 2015 DiSMUS (Department of Human Movement and Sport Sciences): Two years project. Scientific coordinator "Wearable sensors for the assessment of sport performance during sprint running"- Euro 2,500.
- ° 2012 – DiSMUS (Department of Human Movement and Sport Sciences): One year project. Scientific coordinator and post-doc supervisor. "Development of knee joint constraints for knee joint loads estimates through multi body optimization"- Euro 21,565.
- ° 2011 – 2012 Università Italo Francese: Two years project. Scientific coordinator and post-doc supervisor. "Optimization of knee joint kinematics estimate during movement" - Euro 5,600.
- ° 2008 – DiSMUS (Department of Human Movement and Sport Sciences): One year project. Scientific coordinator and post-doc supervisor. "High resolution 3D human movement analysis"- Euro 10,600.
- ° 2001 – 2004: University Foro Italico - Three years Ph.D. scholarship.

### **Participation in funded competitive projects**

- ° 2019 – 2021 Erasmus+ (Horizon 2020, CE, 602929-EPP-1-2018-1-IT-SPO-SCP): "Inclusive Karate: a new perspective to decrease sedentary lifestyle and increase self-confidence in Down Syndrome". (Coordinator Prof. Paola Sbriccoli).
- ° 2019 – 2022 Defense Ministry (PNRM 2019): "Coach indossabile per il veterano (Wearable Assistant for Veterans in sport)". (Coordinator Andrea Mannini).
- ° 2012 – 2015 MIUR (Italian Ministry for University and Research): "Fall risk estimation and prevention in the elderly using a quantitative multifactorial approach". (National Coordinator Prof. A. Cappello, Local Coordinator Prof. A. Cappozzo).
- ° 2012 – 2014 University Foro Italico (Department of Human Movement and Sport Sciences): "A piecewise elastic model of the human tibiofemoral joint: a feasibility study " (Coordinator Prof. A. Cappozzo).
- ° 2012 – 2013 Istituto Commercio Estero (ICE): " SIVAM - Wearable sensors for motor ability evaluation " (Coordinator Prof. A. Cappozzo).
- ° 2008 – Università Italo Francese: "Biomechanics of transtibial amputee running." (Coordinator Prof. A. Cappozzo).
- ° 2007 – 2009 University Foro Italico: "Function of the healthy and diseased knee: biomechanical aspects" (Coordinator Prof. A. Cappozzo).
- ° 2004 – 2006 MIUR (Italian Ministry for University and Research): "Problemi metodologici nella ricostruzione 3-D delle ossa dell'arto inferiore di uno specifico soggetto durante il movimento". (National Coordinator Prof. A. Cappello, Local Coordinator Prof. A. Cappozzo).
- ° 2004 - University Foro Italico: "High resolution 3-D human movement analysis" (Coordinator Prof. A. Cappozzo).
- ° 2004 - Ministero della Salute: "Influenza di attività motoria e lavorativa nella manifestazione e progressione di patologie muscolari subcliniche su base genetica". (National Coordinator V. Molinaro, Local Coordinator Prof. A. Cappozzo)
- ° 2003 - University Foro Italico: "Posturographic signal analysis for the assessment of the effects of the mechanical internal perturbations due to physiological stimulation" (Coordinator Prof. A. Cappozzo).

- ° 2002 - MIUR (Italian Ministry for University and Research): “Morphologic and mechanical information integration for the description of the in-vivo articular function of the human knee”. (National Coordinator Prof. A. Cappello, Local Coordinator Prof. A. Cappozzo).
- ° 2002 - FIRB (Base Research Investment Funds): “Human Movement Analysis for rehabilitation and diagnostic: new image processing techniques for a markerless approach” (National Coordinator Prof. T. D’Alessio, Local Coordinator Prof. A. Cappozzo).
- ° 2002 - University Foro Italico: “High resolution 3-D human movement analysis” (Coordinator Prof. A. Cappozzo).
- ° 2001 - University Foro Italico: “In-vivo reconstruction of bones position and orientation using stereophotogrammetric data” (Coordinator Prof. A. Cappozzo).
- ° 2000 - MIUR (Italian Ministry for University and Research): "Evaluation of postural and locomotor ability in man for clinical application" (National Coordinator Prof. A. Cappozzo).
- ° 2000 - CEE - IST program: “Virtual Animation of the Kinematics of the Human for Industrial, Educational and Research Purposes” (Coordinator Prof. S. Van Sint Jan, Local Coordinator Prof. A. Cappozzo).

## **Teaching and Training Grants**

- ° 2019 - LLP Erasmus: Training Staff Grant at the University of Bath (UK).
- ° 2016 - LLP Erasmus: Training Staff Grant at the University Aix en Marseille (France).
- ° 2013 - University of Granada (Spain): grant to teach in the Course “Evaluación integral de la calidad de vida, una vision multidisciplinar”, within the Master in Investigación en actividad física y deporte (8h).
- ° 2012 - LLP Erasmus: Teaching Staff Grant to teach in the University Lyon1 (France) (8h).

## **National and International collaborations**

### *Current collaborations*

- Jacqueline Alderson - Sport Science, Exercise & Health Department, University of Western Australia, Perth, Australia.
- Laboratoire de Biomécanique et Mécanique des Chocs, Université Lyon 1, France
- Laboratoire de Biomécanique, Arts et Métiers ParisTech, France
- Ezio Preatoni - Department for Health, University of Bath, UK
- Claudia Giacomozzi – Istituto Superiore di Sanità, Rome, Italy
- Andrea Cereatti – University of Sassari, Rome, Italy
- Marco Bernardi – Dipartimento di Fisiologia e Farmacologia “Vittorio Erspamer” and Comitato Italiano Paralimpico
- Eugenio Di Stanislao, R&D, ITOP Officine Ortopediche, Rome, Italy.
- Dr. Di Rosa, Ospedale Pediatrico Bambin Gesù, Rome, Italy.

### *Past collaborations*

- Laboratoire d'Informatique, de Robotique et de Microélectronique de Montpellier (LIRMM), Département ROBOTIQUE, Université Montpellier II, France
- Area Ricerca Centro Protesi INAIL di Budrio
- Centro Sportivo della Guardia di Finanza - Castelporziano
- Biomotion Laboratory, University of Stanford, Stanford, CA, USA
- Bruno Ruscello - Direttore Tecnico delle Squadre Nazionali della Federazione Italiana Hockey e collaboratore presso la Facoltà di Medicina – Scienze Motorie, Università di Roma – Tor Vergata.

## **Honors and acknowledgements**

- Member of the Scientific Committee of the 44<sup>th</sup> Conference of the Societ  de Biomecanique, Poitiers – France, October 2019.
- Member of the Scientific Committee of the 6<sup>th</sup> National Conference of the Italian Bioengineering Group (GNB), Milan (Italy), June 2018.
- Chairman during the VIII Conference of the “Societ  Italiana delle Scienze Motorie e Sportive”, Rome, October 2016.
- Chairman during the 14<sup>th</sup> Conference on 3D Analysis of Human Movement, Taipei – Taiwan, July 2016.
- Organizer of the Tutorial on “Movement analysis via wearable inertial sensors: state of the art and perspectives” at the 37<sup>th</sup> Conference of the IEEE Engineering in Medicine and Biology Society (EMBS), Milan – Italy, August 2015.
- Chairman during the 25<sup>th</sup> Conference of the International Society of Biomechanics, Glasgow – Scotland, July 2015.
- Chairman during the 33<sup>rd</sup> Conference of the International Society of Biomechanics in Sports, Poitiers – France, June 2015.
- Member of the Scientific Committee of the 33<sup>rd</sup> Conference of the International Society of Biomechanics in Sports, Poitiers – France, June 2015.
- Chairman during the Conference of the Italian Chapter of the European Society of Biomechanics, Rome (Italy), June 2012.
- Member of the Organizing Committee of the Third National Conference of the Italian Bioengineering Group (GNB), Rome (Italy), June 2012.
- Member of the Scientific Committee of the Symposium on Sport, Measure & Simulation, Poitiers – France, June 2011.
- Member of the jury for the Jean Viv s Award (Acad mie Nationale Olympique Francaise), June 2011.
- Member of the jury for the PhD and MD awards of the Italian Bioengineering Group (GNB), 2010.
- Elsevier Award for the best scientific presentation, 6<sup>th</sup> SIAMOC Conference, Empoli (Italy), October 2006.

- PhD award “Paolo Durst” – 2005 in cooperation with the Italian Bioengineering Group (GNB), ex-aequo. Bressanone (Italy), September 2005.
- GCMAS (Gait and Clinical Movement Analysis Society) Young Investigator Award, Lexington (KY, USA), April 2004.
- GCMAS (Gait and Clinical Movement Analysis Society) Student Conference Award, Lexington (KY, USA), April 2004.
- Vicon - Oxford Metrics Young Investigator Award, 3<sup>rd</sup> SIAMOC Conference, Bologna (Italy) October, 2002.
- Elsevier Award for the best scientific presentation, 1<sup>st</sup> SIAMOC Conference, Ancona (Italy), October 2001.

### **Editorial Activities for scientific journals. Affiliations**

Currently Associate Editor for *Frontiers in Sports and Active Living Sports Science, Technology and Engineering* (2019- ) and member of the Editorial Board of *Sports Biomechanics* (2019- ).

Former member of the Editorial Board of the *Journal of Medical Engineering* (2012-2017), the *Journal of Healthcare Engineering* (2015-2017) and *Jacobs Journal of Computer Science* (2016-2018).

Serves as board of directors of of the 3-D Analysis of Human Movement (3DAHM) Technical Group of the International Society of Biomechanics (ISB).

Serves as a reviewer for: i) *Gait & Posture*, ii) *Clinical Biomechanics*, iii) *Journal of Biomechanics*, iv) *IEEE Transactions on Biomedical Engineering*, v) *Science et Motricité*, vi) *Sports Medicine, Arthroscopy, Rehabilitation, Therapy & Technology*, vii) *Medicine Engineering and Physics*, viii) *Sensors*, ix) *IEEE Transactions on Automation Science and Engineering*, x) *Medicina dello Sport*, xi) *PlosOne*, xii) *International SportMed Journal*, xiii) *Sports Biomechanics*, xiv) *Computer Methods in Biomechanics and Biomedical Engineering*, xv) *Journal of Electromyography and Kinesiology*.

Member of the Italian Society for Movement Analysis in Clinics (SIAMOC), 2000- , of the International Society of Biomechanics in Sports (ISBS), 2009-2011, 2015, and of the European Society of Biomechanics (ESB), 2012.

### **Other activities and responsibilities**

2014- : Member of the Doctorate of Philosophy school in Human Movement and Sport Sciences at the University of Rome “Foro Italico”.

2007-2012: Member of the Doctorate of Philosophy school in Sport Sciences, Physical Exercise and Ergonomy at the University of Rome “Foro Italico”.

2001-present: Scientific supervision of more than 50 students: PhD candidates in Bioengineering and in Health and Sports Sciences. Master students of the Sport Science and Techniques MD, of the Preventive and Adaptive Motor Sciences MD, of the Management of Sport and Motor Activities MD, and of Bioengineering MD. Bachelor students in Mechanical and Computer Science Engineering and in Human Movement and Sports Sciences.

## PhD students supervision and examination

- Doctorate of Philosophy of *“Human Movement and Sport Sciences”*: Valeria Belluscio (co-supervision)
- Doctorate of Philosophy of *“Sport Sciences, Physical Exercise and Ergonomy”*: Dr. Giorgio Sanna, Dr. Pietro Picerno, Dr. Ilaria Masci (co-supervision), Dr. Federico Quinzi (co-supervision)
- Doctorate of Philosophy of *“Human Movement and Sport Sciences”*: Dr. Valeria Belluscio (co-supervision).
- Doctorate of Philosophy of *“Bioengineering”*: Dr. Elena Bergamini, Dr. Tecla Bonci, Dr. Vincent Richard All these students had a co-tutelle with the University of Paris Tech, Paris, France (Bergamini) and Lyon 1, Lyon, France (Bonci, Richard), Italian supervisor Prof.Cappozzo. For all of them I performed an informal supervision *de facto*, testified by several research papers.
- Internal examiner in the Doctorate of Philosophy of *“Sport Sciences, Physical Exercise and Ergonomy”*: Dr. Leonardo Gizzi
- Outside examiner in the Doctorate of Philosophy of *“Actividad física y salud della Facultad de ciencias de la actividad física y el deporte”* at University of Granada for the PhD candidate Dr. Delia Constanza Serpa Anaya. Thesis title: *“Efecto del entrenamiento excéntrico sobre propiedades biomecánicas del tendón de aquiles”*.
- Outside examiner in the Doctorate of Philosophy of *“Industrial engineering”* at University of Pisa for the PhD candidate Dr. Lorenza Angelini. Thesis title: *“Musculoskeletal analysis of the lumbar spine in daily activities”*.
- Outside examiner in the Joint Doctorate of Philosophy of *“Industrial Production Engineering & Mechanical Engineering”* at the University of Rome “La Sapienza” and University of Sheffield for the PhD candidate Dr. Roberto Di Marco. Thesis title: *“Kinematic modelling of the foot-ankle complex for gait analysis”*.

## Teaching Experience

- Lecturer at University of Granada (Granada, Spain) in the *“Evaluación integral de la calidad de vida, una vision multidisciplinar”* course (2013) within the MD in Investigación en actividad física y deporte (8h).
- Lecturer at University of Lyon1 (Lyon, France) in the *“Analysis and simulation of human movement”* course (2012) within the MD in Biomechanics (2h).
- Lecturer at University of Lyon1 (Lyon, France) in the *“Different aspects of biomechanics”* course (2012) within the MD in Biomechanics (5h).
- Lecturer at University of Rome 3 (Rome, Italy) in the *“Biomechanics”* course (2011-2012; 2014-2015; 2016-2017) within the MD in Bioengineering (9 CFU).
- Lecturer at Foro Italico (Rome, Italy) in the *“Sport Physiology and Biomechanics”* course (2006- ) within the MD in Sport Science and Techniques (5 CFU).
- Lecturer at Foro Italico (Rome, Italy) in the *“Biomechanical technologies”* course (2012-) within the MD in Preventive and Adaptive Motor Sciences (5 CFU).

- Lecturer at Foro Italico (Rome, Italy) in the “Applied Bioengineering” course (2009-2011) within the MD in Management of Sport and Motor Activities (3 CFU).
- Lecturer at Foro Italico (Rome, Italy) in the “Biomechanics of Human Movement” course (2016-) within the Bachelor degree in Human Movement and Sports Sciences.
- Teaching assistant at Foro Italico (Rome, Italy) in the “Biomechanics of Human Movement” course (2001-2005) within the Bachelor degree in Human Movement and Sports Sciences, and in the “Biomechanical technologies” course (2003-2005) within the MD in Preventive and Adaptive Motor Sciences.
- Teaching assistant at University of Rome 3 (Rome, Italy) in the “Applied Locomotor Apparatus Biomechanics” course (2009-2010) within the MD in Bioengineering.

## Invited lectures

- Keynote lecturer at the 38th Conference of the International Society of Biomechanics in Sports on “Thirty years of research on soft tissue artifacts, are we ready to move theory into practice?”, Liverpool (UK), July 2020.
- Invited lecturer at the XXVII Congress of the International Society of Biomechanics within a symposium on “In the wild application of wearable tech for sport: opportunities and obstacles” with a lecture entitled “In the field wearable technology for athlete risk profile and performance assessment”, Calgary (Canada), August 2019.
- Keynote lecturer at the XV International Symposium on 3D Analysis of Human Movement on “Thirty years of research on soft tissue artifacts, are we ready to move theory into practice?”, Salford (UK), July 2018.
- Keynote lecturer at the 22<sup>nd</sup> European College of Sport Sciences (ECSS) on “In-field use of wearable magneto-inertial sensors for motor capacity, sport performance, or risk of injury evaluation: state of the art and perspectives”, Essen (Germany), July 2017.
- Keynote lecturer at the VII National Conference of the Società Italiana delle Scienze Motorie e Sportive (SISMES) on “Sport technique analysis via wearable inertial sensors”, Rome (Italy), October 2016.
- Keynote lecturer at the 1<sup>st</sup> Conference on “Technique analysis for sport performance evaluation via wearable inertial sensors”, Gwalior (India), February 2016.
- Lecturer in the Fourth Colloquium Interuniversity Centre of Bioengineering of the Human Neuromusculoskeletal System (iuc-BOHNES) in a Workshop on “Applications in Ergonomics”, title: “Safety indices for road barriers assessment”, Roma (Italy), January 2019.
- Lecturer in the Third Colloquium Interuniversity Centre of Bioengineering of the Human Neuromusculoskeletal System (iuc-BOHNES) in a Workshop on “From lab testing to applied biomechanics and wearable technologies in sport”, title: “IMU uses in the sport context”, Aix en Provence (France), February 2017.
- Lecturer in the Second Colloquium Interuniversity Centre of Bioengineering of the Human Neuromusculoskeletal System in a Workshop on Anatomy, medical imaging and movement analysis on the “Importance of the anatomical calibration”, Lyon (France), February 2016.
- Lecturer at the 37<sup>th</sup> Conference of the IEEE Engineering in Medicine and Biology Society (EMBS) in the “Movement analysis via wearable inertial sensors: state of the art and perspectives”



Tutorial on “In-field use of wearable inertial sensors for performance evaluation”, Milan (Italy), August 2015.

- Lecturer at the 33<sup>rd</sup> Conference of the International Society of Biomechanics in Sports in the “Physical Activity Monitoring” Applied Section on “In-field use of Wearable magneto-inertial sensors for sport performance evaluation”, Poitiers (France), June 2015.
- Lecturer at a round table: “defeating the soft tissue artefact in human skeletal kinematics reconstruction: the STAPAG endeavor”, at the First Colloquium Interuniversity Centre of Bioengineering of the Human Neuromusculoskeletal System, Rome (Italy), January 2015.
- Lecturer at the XX Congress of the International Society of Electrophysiology and Kinesiology in the Workshop on “Movement analysis with wearable inertial sensors: stepping into clinics and sports”, Rome (Italy), June 2014.

## **Seminars and Course Lectures**

- Seminar at the Department for Health, University of Bath: “Bioengineering research activity at Rome Foro Italico” Bath (UK), 27 February 2019.
- Workshop at the Department for Health, University of Bath: “Human movement analysis using inertial sensors” Bath (UK), 1 March 2019.
- Seminar at the Department of Mechanics, Université Lyon 1: “Wearable inertial sensors: research in sport biomechanics” Lyon (France), 10 February 2012.
- Lecturer for the Balkan TEMPUS Programme (Harmonising Sport Science Curricula in the Balkans in the EU Perspective): “Measures of human movement for sports performance assessment.” Tetovo (FYRoM), 2-3 December 2011.
- Lecturer for the Course “Tecnico competente in acustica ambientale”. Centro Apprendimento Permanente, Università di Roma “Foro Italico”. January – June 2010.
- Lecturer for the Intensive Programme on Sport Performance: A Lifespan Challenge (LLP – ERASMUS, n° 09\_MB\_IP\_00039): “Wearable inertial sensors: sport biomechanics meets performance evaluation.” Roma, 14 February 2010.
- Lecturer for the Technical Symposium of the Italian Society for Movement Analysis in Clinics “Toward new generation clinical protocols in gait analysis.” Empoli, 18 ottobre 2006.
- Seminar at the Human Performance Laboratory, University of Calgary: “Soft tissue artefact modelling” Calgary (Canada), 10 September 2006.
- Lecturer for the Technical Symposium of the Gait and Clinical Movement Analysis Society: “Modeling human movement”. Portland, OG (USA), April, 6, 2005.
- Lecturer for the Course “Functional evaluation of the musculo-skeletal system. Applications in clinical rehabilitation and occupational and sports medicine”, October, 18-19 2004, National Institute of Health (ISS), Rome (Italy).
- Lecturer for the Course “Movement measures” at the National School of Biomechanics, III cycle, April, 8-12 2002, San Giovanni Rotondo, Foggia (Italy).

## **Linguistic level**

Mother tongue(s)	Italian				
Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C1	C2	C2

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user  
Common European Framework of Reference for Languages

## Publications

### Refereed International Journals

- Chell, J., Brandani, C. E., Frascchetti, S., Chakraverty, J., & Camomilla, V. (2019). Limitations of the European barrier crash testing regulation relating to occupant safety. *Accident Analysis & Prevention*, 133, 105239.
- Contini, B. G., Bergamini, E., Alvin, M., Di Stanislao, E., Di Rosa, G., Castelli, E., ... & Camomilla, V. (2019). A wearable gait analysis protocol to support the choice of the appropriate ankle-foot orthosis: A comparative assessment in children with Cerebral Palsy. *Clinical Biomechanics*, 70, 177-185.
- Wells, D., Alderson, J., Camomilla, V., Donnelly, C., Elliott, B., Cereatti, A. (2018). Elbow joint kinematics during cricket bowling using magneto-inertial sensors: A feasibility study. *Journal of Sports Sciences*, 1-10.
- Camomilla, V., Bergamini, E., Fantozzi, S., Vannozzi, G., (2018). Trends Supporting the In-Field Use of Wearable Inertial Sensors for Sport Performance Evaluation: A Systematic Review. *Sensors* 2018, 18(3), 873. doi:10.3390/s18030873
- Camomilla, V., Dumas, R., & Cappozzo, A. (2017). Editorial. Human movement analysis: The soft tissue artefact issue. *Journal of Biomechanics* 62:1-4, 2017.
- Benedetti, M. G., Beghi, E., De Tanti, A., Cappozzo, A., Basaglia, N., Cutti, A. G., ... & Fantozzi, S. (2017). SIAMOC position paper on gait analysis in clinical practice: General requirements, methods and appropriateness. Results of an Italian consensus conference. *Gait & Posture*, 58, 252-260 (2017).
- Camomilla, V., Cereatti, A., Cutti, A. G., Fantozzi, S., Stagni, R., & Vannozzi, G. (2017) Methodological factors affecting joint moments estimation in clinical gait analysis: a systematic review. *BioMedical Engineering OnLine*, 16(1), 106.
- Bonnet, V., Richard, V., Camomilla, V., Venture, G., Cappozzo, A., & Dumas, R. (2017) Joint kinematics estimation using a multi-body kinematics optimisation and an extended Kalman filter, and embedding a soft tissue artefact model. *Journal of Biomechanics*, 62:148-155.
- Cereatti, A., Bonci, T., Akbarshahi, M., Aminian, K., Barré, A., Begon, M., ... & Lin, C. C., Camomilla, V. (2017) Standardization proposal of soft tissue artefact description for data sharing in human motion measurements. *Journal of Biomechanics*, 62:5-13.
- Solav, D., Camomilla, V., Cereatti, A., Barré, A., Aminian, K., & Wolf, A. (2017) Bone orientation and position estimation errors using Cosserat point elements and least squares methods: Application to gait. *Journal of Biomechanics*, 62:110-116
- Camomilla, V., Bonci, T., & Cappozzo, A. (2017) Soft tissue displacement over pelvic anatomical landmarks during 3-D hip movements". *Journal of Biomechanics*, 62:14-20.

12. H. Pillet, E. Bergamini, G. Rochcongar, V. Camomilla, P. Thoreux, P. Rouch, A. Cappozzo, W. Skalli, "Femur, tibia and fibula bone templates to estimate subject-specific knee ligament attachment site locations". *Journal of Biomechanics*, 49(14): 3523-3528 (2016). doi:10.1016/j.jbiomech.2016.09.027.
13. G. Lamberto, V. Richard, R. Dumas, P.P. Valentini, E. Pennestrì, T.W. Lu, V. Camomilla, A. Cappozzo, "Modeling the human tibio-femoral joint using ex vivo determined compliance matrices". *Journal of Biomechanical Engineering*, 138(6):061010 (2016). doi:10.1115/1.4033480.
14. F. Quinzi, V. Camomilla, A. Di Mario, F. Felici, P. Sbriccoli, "Repeated kicking actions alter technical execution in elite karate practitioners". *International Journal of Sport Physiology and Performance*, 11:363-369 (2016), doi: 10.1123/ijsp.2015-0162.
15. D. Solav, M.B. Rubin, A. Cereatti, V. Camomilla, A. Wolf "Bone Pose Estimation in the Presence of Soft Tissue Artifact Using Triangular Cosserat Point Elements". *Annals of Biomedical Engineering*, 44(4):1181-1190 (2016). doi:10.1007/s10439-015-1384-6.
16. T. Bonci, V. Camomilla, R. Dumas, L. Cheze, A. Cappozzo. "Rigid and non-rigid geometrical transformations of a marker-cluster and their impact on bone-pose estimation". *Journal of Biomechanics*, 48(15), 4166-4172 (2015). doi: 10.1016/j.jbiomech.2015.10.031
17. V. Camomilla, T. Bonci, R. Dumas, L. Chèze, A. Cappozzo "A model of the soft tissue artefact rigid component". *Journal of Biomechanics* 06/2015; doi:10.1016/j.jbiomech.2015.05.007.
18. R. Dumas, V. Camomilla, T. Bonci, L. Chèze, A. Cappozzo. "What portion of the soft tissue artefact requires compensation when estimating joint kinematics?" *Journal of Biomechanical Engineering*, 137(6):064502 (2015). doi:10.1115/1.4030363.
19. F. Quinzi, V. Camomilla, F. Felici, A. Di Mario, P. Sbriccoli, "Agonist and antagonist activation remodeling in elite athletes: influence of age". *European Journal of Applied Physiology*, 115(1):47-56 (2015). doi: 10.1007/s00421-014-2990-y.
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- a37. V. Camomilla, T. Bonci, A. Cappozzo. "Pelvis soft tissue artefact assessment during 3-d hip movements". SIAMOC Conference, September 2014, Rome, Italy.
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