Declaration made pursuant to articles 46 and 47 of Presidential Decree No. 445/2000

PERSONAL INFORMATION

Name	**GUIOTTO, ANNAMARIA**
Address	**6A, VIA LOVATI, 35011, CAMPODARSEGO PD**
Telephone	**328 8477604**
E-mail	**annamaria.guiotto@gmail.com**
Nationality	Italian
Date of birth	20/06/1983

WORKING EXPERIENCE

• Date (from-to)	jan 2023 – ongoing
• Name and address of the employer	Dept. of Information Engineering, University of Padova, Italy
• Type of business or sector	Research
• Kind of employment	Research collaboration with scholarship
• Main duties and responsibilities	Gait analysis, postural assessments on healthy and pathologic subjects. Writing algorithms and Matlab codes for gait and posture analysis (kinematic, kinetic and EMG) data processing.

• Date (from-to)	jul 2017 - ongoing
• Name and address of the employer	BBSoF s.r.l., spin off of the University of Padova, Padova, Italy
• Type of business or sector	Biomechanical analysis and software development
• Kind of employment	
• Main duties and responsibilities	Co-founder and partner

• Date (from-to)	jan 2019 - ongoing
• Name and address of the employer	Adjunct professor
• Type of business or sector	University of Padova
• Kind of employment	Teaching activities
• Main duties and responsibilities	Course of "Bioingegneria del Movimento e Riabilitazione" (Ingegneria biomedica e Bioingegneria, DEI), aa 19-20; Course of "Biomeccanica applicata alla valutazione funzionale 1" (Master in Rieducazione Funzionale, Posturologia, Ergonomia e Biomeccanica Applicate, DIMED), a.a. 2020-21, 2021-22 and 2022-23; Course of "Metodi di analisi nella valutazione posturografica 1" (Master in Rieducazione Funzionale, Posturologia, Ergonomia e Biomeccanica Applicate, DIMED), a.a. 2020-21, 2021-22, 2022-23 and 2023-24; Course of "Sensoristica indossabile per il monitoraggio dell'attivita' fisica nei pazienti diabetici" (Corso di laurea magistrale in Scienze e tecniche dell'attività motoria preventiva e adattata, DIMED), a.a. 2023-24 and a.a. 2022-2023; Course of "Laboratorio di Biomeccanica – modulo di Laboratorio di analisi del movimento" (Scienze Motorie, DSB), a.a. 2023-24 and a.a. 2018-19; Course of "Statistica e analisi del movimento – modulo di Analisi del movimento" (Scienze Motorie, DSB), a.a. 2023-24.

• Date (from-to)	oct 2019 – oct 2023
• Name and address of the employer	Italian Society of Movement Analysis in Clinic (SIAMOC)
• Type of business or sector	Scientific society
• Kind of employment	Elected member of the board of directors
• Main duties and responsibilities	2019-2021, re-elected 01/10/2021 - responsible of the website, part of the best thesis award commission (2021), head of the congress scholarship for 2022

• Date (from-to)	jan 2009 – dec 2022
• Name and address of the employer	Dept. of Information Engineering, University of Padova, Italy
• Type of business or sector	Research
• Kind of employment	Several research collaborations as Post Doc, scholarships, CoCoCo or "Prestazioni occasionali"
• Main duties and responsibilities	Gait analysis, postural assessments on healthy and pathologic subjects. Writing algorithms and Matlab codes for gait and posture analysis (kinematic, kinetic and EMG) data processing. Development of finite element models of the diabetic foot. See separate scientific curriculum for more details.
• Date (from-to)	dec 2005 – feb 2013 … mar 2014 – mag 2014
• Name and address of the employer	Associazione Il Grande Patrono, Parish S.Antonio da Padova in Arcella, Padova, Italy
• Type of business or sector	Promotion of worship
• Kind of employment	Secretary
• Main duties and responsibilities	Accounting, management of magazine shipments and Italian and foreign correspondence. Part time.

EDUCATION AND TRAINING

• Date (from-to)	jan 2010 – mar 2013
• Name and type of education or training institution	University of Padua, Dept of Information Engineering
• Qualification	PhD in Information Engineering, section Bioengineering
•Other info	Title: "Development of a gait analysis driven finite element model of the diabetic foot" Supervisor: Prof. C. Cobelli
• Date (from-to)	2010
• Name and type of education or training institution	University of Padua
• Qualification	Esame di stato abilitante alla professione di Ingegnere
• Date (from-to)	sept 2005 – apr 2008
• Name and type of education or training institution	University of Padua
• Qualification	Laurea specialistica in Bioingegneria (Master degree - D.M. 509/99 – cl. 26/S in Biomedical engineering - University of Padova, Italy)
•Other info	Title of the thesis: "Il ruolo delle variabili biomeccaniche nell'analisi morfologica del piede diabetico a fini diagnostici". Supervisor: Prof. Z. Sawacha
	Best thesis award at SIAMOC 2009
• Date (from-to)	oct 2002 – sept 2005
• Name and type of education or training institution	University of Padua
• Qualification	Laurea triennale (Bachelor degree – cl. 08 in Information Engineering - University of Padova, Italy)
•Other info	Title of the thesis:"Sviluppo di un controllore a rete neurale per l'ottimizzazione del bicarbonato in dialisi". Supervisor: Prof. A. Ruggeri.

PERSONAL SKILLS AND COMPETENCES

MOTHERTONGUE	**ITALIAN**
OTHER LANGUAGES	
	English
• Reading ability	Good (level B2)
• Writing skills	Good (level B2)
• Oral expression skills	Good (level B1)
	Spanish
• Reading ability	Elementary
• Writing skills	Elementary

• Oral expression skills	Elementary

TECHNICAL SKILLS AND COMPETENCES

OS: Windows (excellent).
Software: **Office** (excellent), Gimp (good), Photoshop (basic), FrontPage (basic), Share Point Designer (basic), SPSS (basic), Saam II (basic).
Languages: **Matlab** (excellent), Latex (basic), Java (basic), Sql (basic), Html (basic).
Specific – **motion analysis: eMotion SMART Capture – Tracker – Analyzer** (excellent), **Vicon Nexus** (good), **EMG analyzer** (excellent), **WINPOD Imagortesi** (excellent), **NOVEL Pedar e E-Med software** (excellent).
3D finite element modelling: Simpleware-Scan IP-ScanFE software (excellent), Simulia Abaqus (good), IA-FEMesh (basic), Rhinoceros (basic).
Web browsing and information search (excellent).

OTHER SKILLS AND COMPETENCES

Specific instruments for the movement analysis laboratory: **Optoelectronic Stereophotogrammetric system (SMART-E BTS S.r.l.** – excellent – **Vicon** – good), **force plate** (Bertec FP4060), plantar pressure insoles (PedarX Novel.de), **surface electromyographic system** wireless (BTS S.r.l. – excellent), **inertial sensors** (Muse 221e, Gravity Ardesia), videocameras (GoPro Hero 3 and 7).

RESEARCH ACTIVITY: MAIN TOPICS

Expert knowledge on the acquisition, processing and interpretation of motion analysis data in humans (healthy, Paskinsoninas, Diabetics).

Wearable sensors and plates for plantar pressure analysis, Surface Electromyography Analysis applied to Diabetic Subjects and Parkinson's disease patients, Musculoskeletal Modelling applied to Diabetic Foot Biomechanics, Foot Finite Element Modelling, Insole design and simulation, Multisegment 3D Foot Kinematics, Motion Analysis Applied to Diabetic Foot Prevention, Gait analysis and posture in Parkinson's disease patients, Balance and posture.

RELATIONAL SKILLS AND COMPETENCES.

• Aptitude for teamwork gained in 10 years of volleyball sports activity, in scout volunteering and in doctoral and postdoctoral research activities.

• Communication skills, ability to deal with and manage groups of people, even very different ones, acquired as a scout group leader in the relationship with parents and in the management of leaders.

• Strong problem solving skills, gained during engineering training and research activity.

• Predisposition to the educational relationship with children and young people gained over the years of scout service.

ORGANIZATIONAL SKILLS

Great organizational skills acquired in the animation activity in the parish and in the associative scout life of coordinating the group and activities in general.

DRIVER'S LICENCE

B

SEE BELOW

1. LIST OF PUBLICATIONS AND MANAGEMENT AND ORGANIZATIONAL ACTIVITIES

Il dichiarante

Padova,li 22/04/2024

Annamaria Guiotto

PUBBLICATIONS (abstracts in peered reviewed journals are reported at the end of the document)

PAPERS IN PEERED REVIEWED JOURNALS

1. Romanato, M.; Guiotto, A.; Volpe, D.; Sawacha, Z. Center of Mass-Based Posturography for Free Living Environment Applications. Clinical Biomechanics 2023, 104, 105950, doi:10.1016/j.clinbiomech.2023.105950.

2. Spolaor, F.; Guiotto, A.; Ciniglio, A.; Sawacha, Z. The Effect of Custom Insoles on Muscle Activity in Diabetic Individuals with Neuropathy. Applied Sciences 2023, 13, 2326, doi:10.3390/app13042326.

3. Spolaor, F., Guiotto, A., Ciniglio, A., Cibin, F., Sawacha, Z. Effects of a proprioceptive focal stimulation (Equistasi®) on reducing the biomechanical risk factors associated with ACL injury in female footballers. Frontiers in Sports and Active Living, 2023, 5, 1134702, doi: 10.3389/fspor.2023.1134702.

4. Guiotto, A., Spolaor, F., Albani, G., & Sawacha, Z. (2022). Could Proprioceptive Stimuli Change Saddle Pressure on Male Cyclists during Different Hand Positions? An Exploratory Study of the Effect of the Equistasi® Device. Sports., 10(6). https://doi.org/10.3390/sports10060088

5. Piatkowska, W., Spolaor, F., Guiotto, A., Guarneri, G., Avogaro, A., & Sawacha, Z. (2022). EMG analysis across different tasks improves prevention screenings in diabetes: A cluster analysis approach. Medical and Biological Engineering and Computing, doi:10.1007/s11517-022-02559-3.

6. Romanato, M., Volpe, D., Guiotto, A., Spolaor, F., Sartori, M., & Sawacha, Z. (2022). Electromyography-informed modeling for estimating muscle activation and force alterations in Parkinson's disease. Computer Methods in Biomechanics and Biomedical Engineering, 25(1), 14-26. doi:10.1080/10255842.2021.1925887.

7. Guiotto, A.; Ciniglio, A.; Spolaor, F.; Pavan, D.; Cibin, F.; Scaldaferro, A.; Sawacha, Z. Reliability and Repeatability of ACL Quick Check®: A Methodology for on Field Lower Limb Joint Kinematics and Kinetics Assessment in Sport Applications. Sensors 2022, 22, 259, doi:10.3390/s22010259.

8. Romanato M., Volpe D., Guiotto A., Spolaor F., Sartori M., Sawacha Z. (2022). Towards the Use of Neuromusculoskeletal Modeling in Clinical Practice: A Feasibility Study in Parkinson Disease Patients. In: Biosystems and Biorobotics. BIOSYSTEMS & BIOROBOTICS, vol. 28, p. 439-443, Springer Science and Business Media Deutschland GmbH, doi: 10.1007/978-3-030-70316-5_70

9. Guiotto, A.*; Ciniglio, A.*; Spolaor, F.; Sawacha, Z. The Design and Simulation of a 16-Sensors Plantar Pressure Insole Layout for Different Applications: From Sports to Clinics, a Pilot Study. Sensors (Basel) 2021, 21, 1450, doi:10.3390/s21041450. * equal contributors

10. Sawacha, Z.; Spolaor, F.; Piątkowska, W.J.; Cibin, F.; Ciniglio, A.; Guiotto, A.; Ricca, M.; Polli, R.; Murgia, A. Feasibility and Reliability Assessment of Video-Based Motion Analysis and Surface Electromyography in Children with Fragile X during Gait. Sensors (Basel) 2021, 21, 4746, doi:10.3390/s21144746.

11. Romanato, M.; Guiotto, A.; Spolaor, F.; Bakdounes, L.; Baldassarre, G.; Cucca, A.; Peppe, A.; Volpe, D.; Sawacha, Z. Changes of Biomechanics Induced by Equistasi® in Parkinson's Disease: Coupling between Balance and Lower Limb Joints Kinematics. Med Biol Eng Comput 2021, 59, 1403–1415, doi:10.1007/s11517-021-02373-3.

12. Spolaor, F.; Romanato, M.; Guiotto, A.; Peppe, A.; Bakdounes, L.; To, D.-K.; Volpe, D.; Sawacha, Z. Relationship between Muscular Activity and Postural Control Changes after Proprioceptive Focal Stimulation (Equistasi®) in Middle-Moderate Parkinson's Disease Patients: An Explorative Study. Sensors (Basel) 2021, 21, E560, doi:10.3390/s21020560.

13. Spolaor, F.; Mason, M.; De Stefani, A.; Bruno, G.; Surace, O.; Guiotto, A.; Gracco, A.; Sawacha, Z. Effects of Rapid Palatal Expansion on Chewing Biomechanics in Children with Malocclusion: A Surface Electromyography Study. Sensors (Basel) 2020, 20, E2086, doi:10.3390/s20072086.

14. Volpe D., Spolaor F, Sawacha Z., Guiotto A., Pavan D., Bakdounes L., Urbani V., Frazzitta G., Iansek R.. Muscular activation changes in lower limbs after hydrotherapy underwater gait training in Parkinson's disease: a surface emg pilot study. Gait Posture. 2020 Jul;80:185-191. doi: 10.1016/j.gaitpost.2020.03.017

15. Sawacha Z, Sartor CD, Yi LC, Guiotto A, Spolaor F, Sacco ICN. Clustering classification of diabetic walking abnormalities: a new approach taking into account intralimb coordination patterns. Gait Posture. 2020 Apr 17;79:33-40. doi: 10.1016/j.gaitpost.2020.03.016

16. Peppe A., Paravati S., Baldassarre M.G., Bakdounes L., Spolaor F., Guiotto A., Pavan D., Sawacha Z., S. Bottino, D. Clerici, N. Cau, A. Mauro, G. Albani, M. Avenali, G. Sandrini, C. Tassorelli, D. Volpe, Proprioceptive Focal Stimulation (Equistasi®) May Improve the Quality of Gait in Middle-Moderate Parkinson's Disease Patients. Double-Blind, Double-Dummy, Randomized, Crossover, Italian Multicentric Study, Front Neurol. 10 (2019) 998. doi: 10.3389/fneur.2019.00998

17. Mason M., Spolaor F., Guiotto A., De Stefani A., Gracco A., Sawacha Z. Gait and posture analysis in patient with unilateral posterior crossbite, before and after RPE. Int Orthod, 2018; 16(1):158-173. doi: 10.1016/j.ortho.2018.01.003

18. Scarton A., Guiotto A., Malaquias T., Sinigaglia G., Jonkers I., Cobelli C., Sawacha Z. A methodological framework for evaluating plantar pressure and stresses in the internal foot structures by combining gait analysis, a new musculoskeletal foot model and a foot finite element model. Gait Posture, 2018; 60:279-285. doi: 10.1016/j.gaitpost.2016.07.076 (Best paper award ESMAC 2016).

19. Aerts W. , Scarton A., De Groote F., Guiotto A., Sawacha S., Cobelli C., Vander Sloten J. and Jonkers I. Validation of plantar pressure simulations using finite and discrete element modelling in healthy and diabetic subjects. Comput Method Biomech, 2017 Oct;20(13):1442-1452. doi: 10.1080/10255842.2017.1372428

20. Scarton A., Jonkers I., Guiotto A., Spolaor F., Guarneri G., Avogaro A., Cobelli C., Sawacha Z. Comparison of lower limb muscle strength between diabetic neuropathic and healthy subjects using opensim. Gait Posture, 2017;58:194-200. doi: 10.1016/j.gaitpost.2017.07.117

21. Volpe D., Pavan D., Morris M., Guiotto A., Iansek R., Fortuna S., Frazzitta G., Sawacha Z.. Underwater gait analysis in Parkinson's disease. Gait Posture. 2017; 52:87-94. doi: 10.1016/j.gaitpost.2016.11.019

22. Guiotto A., Scarton A., Sawacha Z., Guarneri G., Avogaro A., Cobelli C., Gait analysis driven 2D finite element model of the neuropathic hindfoot. J Mech Med Biol. 2016; 16(1). doi: 10.1142/S0219519416500123

23. Hannah I. Sawacha Z., Guiotto A., Mazzà C. Relationship between sagittal plane kinematics, foot morphology and vertical forces applied to three regions of the foot. Int Biomech. 2016;3(1):50-56. doi: 10.1080/23335432.2016.1229135

24. Guiotto A.*, Sawacha Z.*, Scarton A., Guarneri G., Avogaro A., Cobelli C., 3D finite element model of the diabetic neuropathic foot: a gait analysis driven approach. J Biomech. 2014; 47:3064-3071. doi: 10.1016/j.jbiomech.2014.06.029 * Equal contributors

25. Guiotto A., Sawacha Z., Guarneri G., Cristoferi G., Avogaro A., Cobelli C., The role of foot morphology on foot function in diabetic subjects with or without neuropathy. Gait Posture. 2013; 37 603–610. doi: 10.1016/j.gaitpost.2012.09.024

26. Sawacha, Z., Carraro, E., Contessa, P., Guiotto, A., Masiero, S., Cobelli, C.. Relationship between clinical and instrumental balance assessments in chronic post-stroke hemiparesis subjects. J Neuroeng Rehabil. 2013; 10, 95. doi: 10.1186/1743-0003-10-95

27. Sawacha Z.*, Carraro E.*, Del Din S.*, Guiotto A.*, Bonaldo L., Punzi L., Cobelli C., Masiero S., Biomechanical assessment of balance and posture in subjects with ankylosing spondylitis. J Neuroeng Rehabil. 2012;9(1):63. doi: 10.1186/1743-0003-9-63 *Equal contributors

28. Sawacha Z., Guarneri G., Cristoferi G., Guiotto A., Avogaro A., Cobelli A., Integrated kinematics-kinetics-plantar pressure data analysis: a useful tool for characterizing diabetic foot biomechanics. Gait Posture. 2012; 36(1): 20-6. doi: 10.1016/j.gaitpost.2011.12.007

29. Del Din S., Carraro E., Sawacha Z., Guiotto A., Bonaldo L., Masiero S., Cobelli C., Impaired gait in ankylosing spondylitis. Med Biol Eng Comput. 2011 Jul;49(7):801-9. doi: 10.1007/s11517-010-0731-x

30. Sawacha Z., Guarneri G., Cristoferi G., Guiotto A., Avogaro A., Cobelli C., Diabetic gait and posture abnormalities: A biomechanical investigation through three dimensional gait analysis, Clin. Biomech., Nov 2009; 24 (9):722-728. doi: 10.1016/j.clinbiomech.2009.07.007

AWARDS FOR RESEARCH ACTIVITIES

2018	- Best Paper Award SPWID 2018 (International Conference on Smart Portable, Wearable, Implantable and Disability-oriented Devices and Systems) Title: "Proprioceptive Focal Stimulation (Equistasi®) May Improve Motor Symptoms in Moderate Parkinson's Disease Patients. Italian Multicentric Preliminary Open Study". (coauthor)
2016	- Best paper award of the Conference of the European Society for Movement Analysis in Adults and Children (ESMAC) 2016, 28 Sett-1 Ott, Siviglia, Spain. Title: "A methodological framework for detecting ulcers' risk in diabetic foot subjects by combining gait analysis, a new musculoskeletal foot model and a foot finite element model.", Authors: Scarton A., Guiotto A., Malaquias T., Sinigaglia G., Jonkers I., Sawacha Z.
2015	- Best Clinical Paper of XVIth Congress SIAMOC, 30 Set-3 Ott, Padova, Italy. Title: Under water gait analysis in parkinson's disease, Authors: Volpe D., Morris M., Guiotto G., Iansek R., Frazzitta G., Sawacha Z.
2015	- Best Paper at the MEIbioeng15 Conference, 7th-8th September, Leeds, UK. Title: Modelling the distribution of vertical force in multi-segment foot model. Authors: Hannah I., Sawacha Z., Guiotto G., Mazzà C.
2010	- BTS-Bioengineering/SIMFER Award 2010 "Abnormal activation of knee and ankle flexors-extensors is related to altered gait in ankylosing spondylitis?", ESPRM congress 2010. (coauthor)
2009	- Best thesis award SIAMOC 2009. Title "Ruolo delle variabili biomeccaniche nell'analisi morfologica del piede diabetico a fini diagnostici" Supervisor: Dott.ssa Zimi Sawacha.

MANAGEMENT AND ORGANIZATIONAL ACTIVITIES

ORGANISATION OF SCIENTIFIC MEETINGS

2024	**Member of the scientific and organizing committee** of the Interuniversity Centre of Bioengineering of the Human Neuromusculoskeletal System (BoHNeS) colloquium, Padova, 18-19 jan BoHNeS connects at a european level 8 academic members (Universities) and three associate members (private research centers and companies) and promotes joint research activities e projects as well as events (colloquiums) for the dissemination of research and teaching activities.
2023	**Member of the scientific committee** of the Conference ISB (International Scoiety of Biomechanics), Fukuoka, 30 jul-3 ago 2023
2023	**Member of the scientific committee** of the Conference SIAMOC 2023, Roma, 4-7 oct 2023
2021	**Member of the scientific and organizing committee** of the Conference SIAMOC 2021 online, 30 sept-1 oct
2015	**Member of the organizing committee** of the Conference SIAMOC 2015, 30-sept-3 oct 2015, Padova, Italy

POSITIONS IN NATIONAL AND INTERNATIONAL SCIENTIFIC SOCIETIES

oct 2019-oct 2023	**Elected member of the board** of SIAMOC society (2019-2021, re-elected 01/10/2021, until Oct 2023)
2018-2019	**Elected junior fellow representative** of the Interuniversitary Center of Bioengineering of the Human Neuromusculoskeletal System (IUC-BOHNES)

MEMBERSHIPS AND ELECTED MEMBER IN BOARD OF SCIENTIFIC SOCIETIES

2009-ongoing	Member of SIAMOC
2008-ongoing	Member of International Foot & Ankle Biomechanics Community (iFAB)
2012- ongoing	Member of the Interuniversitary Center of Bioengineering of the Human Neuromusculoskeletal System (IUC-BOHNES)
2013-2022	Member of European Society of Biomechanics (ESB) and its Italian chapter (ESB-ITA)
2019 and 2021	Member of European for Movement Analysis in Adults and Children (ESMAC)
2010-2015 and 2023	Member of Italian National Bioengineering Group "GNB"