

Rachele ROSSANIGO

Date and place of birth: 03/22/1995, PAVIA (PV) ITALY

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WORK and PROFESSIONAL EXPERIENCE

- 11/01/2021-
12/23/2021** **Guest researcher**
Roessingh Research and Development, Enschede, The Netherlands
Research topic: *Development of methods of sensor fusion to optimize the pedestrian navigation and balance monitoring*
- 11/01/2020-
up to present** **PhD student in Biomedical Sciences – Neuroscience**
University of Sassari, Sassari, Italy
Research topic: *Development of methods for the evaluation of mobility and physical activity through miniaturized wearable sensors*
- 01/07/2020-
10/31/2020** **Research scholar**
University of Sassari, Sassari, Italy
Research topic: *Evaluation of the mobility and the posture with magneto-inertial sensors*
- 03/22/2019-
12/10/2019** **Master thesis student**
PolitoBioMedLab – Movement Analysis Lab, Politecnico di Torino, Torino, Italy
Analysis of spatial parameters during gait with magneto-inertial sensors and infrared proximity sensors
- 03/01/2017-
06/10/2017** **Intern**
BioLab, Department of Electronics and Telecommunications,
Politecnico di Torino, Torino, Italy
Validation of an automated image segmentation algorithm for histological images

EDUCATION

- 09/07/2017-
12/10/2019** **Master Degree in Biomedical Engineering**
Politecnico di Torino, Torino, Italy
Thesis: *Analysis of spatial parameters during gait with magneto-inertial sensors and infrared proximity sensors*
Final grade 110/110 cum laude
- 08/18/2018-
01/15/2019** **Erasmus Programme E+/EU Programme Countries**
KTH – Kungliga Tekniska Högskolan (Royal Institute of Technology), Stockholm, Sweden
Image Analysis and Computer Vision, Medical Information and Communication Systems, Safe Medical Devices
- 08/11/2014-
07/21/2017** **Bachelor Degree in Biomedical Engineering**
Politecnico di Torino, Torino, Italy
Thesis: *Analysis of automated methods in immunohistochemistry studies*
Final grade 110/110 cum laude
- 2014** High school diploma: Maturità Scientifica
Final grade 100/100 cum laude

HONORS and AWARDS

09/10/2020 My master thesis entitled 'Analysis of spatial parameters during gait with magneto-inertial sensors and infrared proximity sensors' was awarded of the **prize 'Laboratory of Biosignals, Bioimages and Bioinformatics'** by the Italian National Bioengineering Group (GNB).

COMPUTER SKILLS

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|---|---|
| Programming Language | MATLAB (advanced), C, Assembly |
| FEM | Nastran, Comsol |
| CAD | Patran, Rhinoceros, Solidworks, Autodesk Fusion 360 |
| Programming Graphic Language | LabView |
| Classification and Optimisation Algorithm | Neural Network, Genetic Algorithms, Fuzzy Logic |
| Web Application Integrated Development Environment | App Inventor |

LANGUAGE SKILLS

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| Mother tongue | Italian |
| English (certified) | Understanding: B2, Speaking: B2, Writing: B2 |

CONFERENCES and SCHOOLS

21th Congress of the Italian Society of Clinical Movement Analysis (SIAMOC)
October 2021, online

16th edition of IEEE International Symposium on Medical Measurements and Applications (MeMeA)
June 2021, Neuchâtel, Switzerland (online)

6th Interuniversity Centre of Bioengineering of the Human Neuromusculoskeletal System (IUC-BoHNeS) Colloquium
January 2021, online

39th Annual School of the Italian National Bioengineering Group (GNB)
September 2020, Bressanone, Italy
AI-enabled health care: from decision support to autonomous robots

5th Interuniversity Centre of Bioengineering of the Human Neuromusculoskeletal System (IUC-BoHNeS) Colloquium
January 2020, Bruxelles, Belgium

20th Congress of the Italian Society of Clinical Movement Analysis (SIAMOC)
October 2019, Bologna, Italy

PUBLICATIONS

Publications on international journals

A. Polhemus, L. Delgado Ortiz, G. Brittain, N. Chynkiamis, F. Salis, H. Gaßner, M. Gross, C. Kirk, **R. Rossanigo**, et al., "Walking on common ground: A cross-disciplinary scoping review on the clinical utility of digital mobility outcomes", *npj Digit. Med.* 4, 149 (2021), doi: 10.1038/s41746-021-00513-5.

Conference proceedings published on international journals

R. Nicola, G.L. Cerone, M. Caruso, **R. Rossanigo**, A. Cereatti, T. Vieira, 'On the Detection of High-Quality, High-Density Electromyograms During 80m Sprints: a Case Study', 17th International Symposium on Medical Measurements and Applications (MeMeA), 2022, in press.

R. Rossanigo, M. Caruso, F. Salis, S. Bertuletti, U. Della Croce, A. Cereatti, 'An optimal procedure for stride length estimation using foot-mounted magneto-inertial measurement units', 16th IEEE International Symposium on Medical Measurements and Applications (MeMeA), 2021, pp. 1-6, doi: 10.1109/MeMeA52024.2021.9478604.

M. Caruso, **R. Rossanigo**, A. M. Sabatini, M. Knaflitz, M. Gazzoni, U. Della Croce, A. Cereatti, 'Towards an automatic parameter setting for MIMU sensor fusion algorithms', *Gait & Posture*, 74(Supplement 1):S8, 2019. XX Congress of the Italian Society of Clinical Movement Analysis (SIAMOC), Bologna, October 2019, doi: 10.1016/j.gaitpost.2019.07.453.

National conference proceedings

R. Rossanigo, S. Bertuletti, M. Caruso, U. Della Croce, M. Knaflitz, A. Cereatti, "Base of support estimation during gait using wearable sensors: validation on healthy subjects," Proceedings of the XXI Congress of the Italian Society of the Clinical Movement Analysis (SIAMOC), 2021, doi: 10.6092/unibo/amsacta/6846.

R. Rossanigo, S. Bertuletti, M. Caruso, M. Knaflitz, U. Della Croce, A. Cereatti, 'Estimation of the base of support during gait with an unobtrusive wearable system', Proceedings of VII Congress of the National Group of Bioengineering (GNB), Trieste, June 2020.

F. Salis, S. Bertuletti, M. Caruso, T. Bonci, K. Scott, **R. Rossanigo**, U. Della Croce, C. Mazzà, A. Cereatti, 'A novel multi-sensor system for gait assessment in real-world conditions: preliminary results', Proceedings of VII Congress of the National Group of Bioengineering (GNB), Trieste, June 2020.

UNIVERSITY PROJECTS

- 04/01/2019-01/07/2019** *Brain Computer Interface: Modelling of a capacitive and piezoresistive pressure sensor applied to intracranial pressure monitoring*
Politecnico di Torino, Torino, Italy
- 11/01/2018-01/15/2019** *How to place on the market a percutaneous coronary intervention kit with stent*
KTH – Kungliga Tekniska Högskolan (Royal Institute of Technology), Stockholm, Sweden
- 08/18/2018-11/01/2018** *Make a measurement device with wireless communication: Programming a 'Micro:bit' and developing an App for smartphones for the heart rate monitoring*
KTH – Kungliga Tekniska Högskolan (Royal Institute of Technology) , Stockholm, Sweden
- 03/01/2018-07/01/2018** *Model of the growth of a thrombus in a venous vessel on Comsol*
Politecnico di Torino, Torino, Italy
- 12/01/2017-02/01/2018** *Hardware and software development of a heart rate monitor*
Politecnico di Torino – DET (Department of Electronics and telecommunications), Torino, Italy