FRANCESCA SALIS

PhD Student @UNISS, MsC Degree in Biomedical Engineering @PoliTO

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Gender Female Birth Nov 16th, 1993 Nationality Italian

WORK EXPERIENCES

PhD Student in Neuroscience
Università degli Studi di Sassari

November 2019 - Today @ Sassari(SS)

Main activities and responsibilities: Development and optimisation of algorithms for the description of motor ability using a novel wearable multi-sensor system for gait analysis in real-world scenarios.

Research Scholar
Università degli Studi di Sassari

January 2019 - October 2019 @ Sassari(SS)

Main activities and responsibilities: Estimation of spatio-temporal parameters during gait using wearable sensors.

Assistant during the laboratory of the course 'Prosthesis and Organs Design'
Politecnico di Torino

March 2017 - June 2017 @ Torino (TO)

Undergraduate Internship
Clinica Cellini

October 2015 - December 2015 @ Torino (TO)

ACADEMIC STUDIES

Master's Degree, Biomedical Engineering
Politecnico di Torino

March 2016 - October 2018 @ Torino (TO)

Master's degree in biomedical engineering (biomedical instrumentation) LM-21 - 2nd level degree in biomedical engineering.
Final degree mark: **109/110**
Graduation date: 26/10/2018

Bachelor's Degree, Biomedical Engineering
Politecnico di Torino

October 2012 - March 2016 @ Torino (TO)

Bachelor's degree in biomedical engineering. L-9 - 1st level degree in industrial engineering. Final degree mark: **93/110**
Graduation date: 30/03/2016

SOFT SKILL

Autonomy 8/10
Self-confidence 8/10
Flexibility/Adaptability 8/10
Resistance to stress 9/10
Ability to plan and organize 8/10
Precision/Attention to details 9/10
Learn continuously 8/10
Achievement of objectives 9/10
Managing information 8/10
Entrepreneurial spirit and initiative 8/10
Communication 8/10
Problem Solving 8/10
Teamwork 10/10
Leadership 9/10

LANGUAGES

Mother Tongue: **ITALIAN**

English ○ ○ ○ ○ ○
Spanish ○ ○ ○ ○ ○

DIGITAL COMPETENCES

BASIC DIGITAL COMPETENCE

Operating systems ○ ○ ○ ○ ○
Programming languages ○ ○ ○ ○ ○
Word processing ○ ○ ○ ○ ○
Electronic spreadsheet ○ ○ ○ ○ ○
Data base administrators ○ ○ ○ ○ ○
CAD skills ○ ○ ○ ○ ○
Internet skills ○ ○ ○ ○ ○
Multimedia ○ ○ ○ ○ ○

PROGRAMMING LANGUAGES KNOWN: C, C++, Assembler, Matlab
SOFTWARE APPLICATIONS: Matlab, Microsoft Office (Word,Excel,Access), Codeblocks, SolidWorks, Comsol, LateX, LabView, Patran-Nastran, Rhinoceros, MVN Studio, Symulink, Vicon Nexus

SPECIFIC COMPETENCES

Wearable sensors, gait analysis, signal processing, data analysis, inertial sensors, motion capture systems, rehabilitation.

Scientific Certificate

Liceo Scientifico Giovanni Spano

2012 @ Sassari (SS)

School leaving examination mark: **100/100**
Kind of secondary school: italian secondary school diploma Kind of secondary school attended: public school

STUDIES AND EXPERIENCES ABROAD

Master's Thesis Abroad

École polytechnique fédérale de Lausanne (EPFL) Translational Neuro-Engineering (TNE) Lab - Campus Biotech

March 2018 - September 2018 @ Geneva (Switzerland)

Master's Thesis abroad
Language: English | Duration: 6 months
Thesis title: A new approach for quantitative assessment of upper extremity impairment in post-stroke patients: a pilot study.

Supervisors: Danilo Demarchi, Silvestro Micera, Camilla Pierella
Thesis work: Upper-Extremity Fugl-Meyer Assessment is the most used scales for stroke patients in case of upper limb motor deficits. However, this scale is clinician-dependent, the evaluation is qualitative, it gives only a partial description of patient condition and has only poor sensitivity to mild impairment. For all those reasons, in this thesis a new approach for quantitative assessment of upper-extremity impairment in post stroke-patients is proposed. XSens Awinda and Myo armband systems were used for testing a total of 11 tasks from the Upper Extremity Fugl-Meyer Assessment scale. The first device was used in upper-body configuration in order to collect data not only from the arm used for performing the exercises but also from the contralateral part. Myo armband was positioned on the forearm.Two experiments were performed, the first one involving 9 healthy subjects and the second one 1 stroke patient with the help of a physical therapist. A complete analysis was performed on kinematic data (XSens was used on all the 10 subjects). The following parameters were extracted: time, velocity and jerk from both simple and complex movements; normalized trajectory, shoulder angle and elbow angle from simple movements; 2D Correlation Coefficient from both simple and complex movements; Principal Component Analysis (PCA) on complex movements. An exploratory analysis was executed on EMG data, since recording with Myo armband was performed on only 3 healthy subjects. Also in this case, several metrics were chosen, including RMS value, Correlation Coefficient and PCA. Results obtained suggest that the selected parameters can lead to a more complete description of impairment, since they are able to capture differences between stroke and healthy subjects.