PERSONAL INFORMATION   Marco Marchitto

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WORK EXPERIENCE

01/10/2020 – 01/02/2021

Researcher / Independent Consultant

Institution — Med-logix Srl, Rome, Italy

Area — Robotics

Task — **Simulation and control of a robotic arm** in the field of oncology with the purpose of enhancing the precision and reproducibility of Hyperthermia superficial therapy

01/10/2019 – 30/03/2020

Internship/Master thesis

Institution — LAAS-CNRS, Toulouse, France

Area — Robotics and Biomechanics

Task — **Kinematic and dynamic analysis** of two twins, one healthy the other with a cerebral palsy diagnosis, for devising a personalized rehabilitation exoskeleton

EDUCATION AND TRAINING

2016 – 2020

Master of Science in Artificial Intelligence and Robotics

Institution — Sapienza - Università di Roma, Rome, Italy

Thesis statement — Motion analysis for children with cerebral palsy: a comparative study on twins

Advisor — Prof. Marilena Vendittelli

Co-advisor — Prof. Bruno Watier

Vote — 110/110

2013 – 2016

Bachelor degree in Informatic and Automatic engineer

Institution — Sapienza - Università di Roma, Rome, Italy

Thesis statement — Acquisition of 2D quantities by measures and interpolation, with applications in temperature measures

Advisor — Prof. Paolo Di Giamberardino

Vote — 110/110 Summa cum Laude

ACADEMIC PROJECTS

Robotics
– Vision-based avoidance of dynamic obstacles with NAO **humanoid**
– Emergency stop procedures for the HRP-4 **humanoid** robot
– Cooperative transportation of a cable-suspended payload by **multiple quadrotors**
– Shared control of a **quadrotor** navigating among obstacles using the **Oculus**
– **Gestures control** for **Pepper** robot

AI
– **Video classification** using MASK R-CNN and LSTM neural networks
– **Activity recognition** based on human motion primitives
– **Reinforcement Learning** to train a robot to follow a predefined path in a grid world
– Implementation of the **Linear Temporal Logic** on Pepper robot

Others
– Analysis of an Instagram subnetwork using **data mining** techniques
– 3D Snake game implementation using **computer graphics** techniques

ACADEMIC ACTIVITIES AND PUBLICATIONS

OpenDiag
Presentation of a demo on NAO omnidirectional walking at the DIAG ("Dipartimento di Ingegneria Informatica, Automatica e Gestionale") **Open day** in 2018 and 2019

Short article	M. Marchitto, S. Otmani, B. Watier. 2020. Gait analysis comparison of two twins: one healthy and one with spastic cerebral palsy. **Computer Methods in Biomechanics and Biomedical Engineering**. Presented at the 45th congress of the Société de Biomécanique

Abstract	M. Marchitto, S. Otmani, B. Watier. 2020. Ground reaction forces of two twins during gait: One healthy and one with spastic cerebral palsy. **Gait & Posture**. Presented at the ESMAC conference in 2020

PERSONAL SKILLS

Mother tongue	Italian

Other languages

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
B1	B1	B1	B1	B1
English — Attendance certificate of the B1 English level course at the "International House - Accademia Britannica - Roma"				
A1	A1	A1	A1	A1
French — Attendance certificate of the A1 French level course at the "Université Fédérale Toulouse Midi-Pyrénées "				

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
Common European Framework of Reference for Languages

Programming languages	Good knowledge of **Matlab**, **Python**, **C++**, Java, C, Octave, LUA, SQL, Prolog and Arduino language and basic knowledge of JavaScript, HTML, PDDL and WebGL

AI&Robotics environments and frameworks	Good knowledge of **V-Rep**, **NAOqi**, **Simulink**, **TensorFlow**, **Opensim**, **Vicon Nexus**, Netkit, Labelbox and Cytoscape

Operative systems and other software	Excellent knowledge of the Office (Word, PowerPoint, Excel) and Latex package and of the Linux and Windows (xp, 7, 8, 10) operative systems. Good knowledge of **Visual studio**, **Github**, Adobe Premiere Pro and Inkscape