PERSONAL INFORMATION Marcello Chiurazzi

[personal contact details illegible]
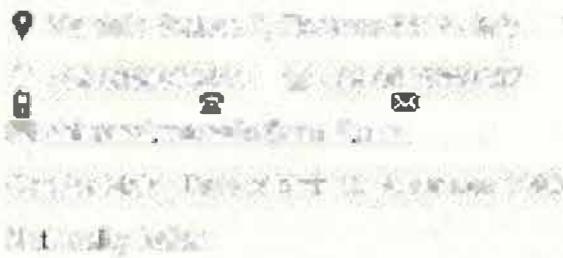
WORK EXPERIENCE

October 2018 – Present **Coordinated and continuous collaboration**

Scuola Superiore Sant'Anna
Viale Rinaldo Piaggio 34, 56025 Pontedera (Italy)

SMASH project - Smart Machine for Agricultural Solutions Hightech

- Control of UR10 (Python)
- Development of algorithm for autonomous navigation using 2D laser scanners (Labview)
- Development of a visual system for plant desease detection (C++)

December 2019 – Present **Coordinated and continuous collaboration**

[illegible]

HEXtraSENSE project - A collaborative Skin for industrial robots

- PM of the project aimed at developing a Proof Of Concept (POC) of the capacitive technology embedded onto an industrial robot

February 2017 – October 2017 **Robotic assistant researcher**

Scuola Superiore Sant'Anna
Viale Rinaldo Piaggio 34, 56025 Pontedera (Italy)

AURA - Novel collaborative strategies for Human Robot Collaboration

- Design and implementation of proximity sensor for obstacle detection
- CAD design of the collaborative Skin of the robot (Solidworks)
- Development of a simulated virtual environment for the collaborative Skin of industrial robots (ROS)
- Development of control algorithms for enabling collision avoidance strategies (LabView)
- Development of an electric model of the human hand

January 2016 – December 2016 **Robotic assistant researcher**

[illegible]

HOMEREHAB - ECHORD++

[illegible]

- CAD design and control of a robotic device for *in-home* rehabilitation of the upper limb for post-stroke patients (PTCrep,Matlab)
- mechatronic development of the robotic device
- serious game development (Vizard, OGRE)
- python tutor

EDUCATION AND TRAINING

October 2018–Present PhD Program in BioRobotics

Scuola Superiore Sant'Anna, Pontedera Italy

Novel sensorized technologies for human robot collaboration in medical scenarios

- Development of capacitive strategies for human augmented detection within industrial and medical scenario
- Development of a novel capacitive catheter for High Resolution Esophageal manometry
- Sensorization of a novel device for bone reconstruction
- Control and sensorization of a dual arm robot for circular economy applications
- Development of a novel capacitive device for capsule localization
- Teaching assistant for the biomedical robotics course
- Development of a simulated environment and development of control algorithms for Arona project (robotic mini-invasive skeletal surgery)
- Development of imaging algorithms within the H2020 Endoo project (Endoscopic versatile robotic guidance, diagnosis and therapy of magnetic-driven soft-tethered endoluminal robots)

2013-2015 Master degree in bio-medical engineering - Robotic curriculum

Università Campus Bio-Medico di Roma, Roma Italy

Multiple object grasping using semantic inference - *developed at ICT lab of the Technische Universität München*

- Object recognition using markers (ARuco)
- Build up of the robot knowledge base for the robot to be aware of the working environment (KnowRob and OWL)
- Implementation of inference rules to build up a dynamic and fast scalable knowledge base (Prolog)
- Implementation of control algorithms for human-robot interaction
- Simulations (Rviz, ROS, Gazebo)

2009-2013 Bachelor degree in bio-medical engineering

Università Federico II di Napoli, Naples Italy

Static and dynamic modelling of the human gait cycle

- Skeletal muscle system analysis during gait cycle
- Lower limb modellings and implementation of its bio-mechanical model (Matlab)
- Kinematic analysis and computation of the acting forces of the skeletal muscle system during the human gait cycle

PERSONAL SKILLS

Mother tongue Italian

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	B2
Spanish	B2	B2	B2	B2	B2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user
Common European Framework of Reference (CEF) level

Communication skills — Team work: I have worked in various research teams made up by several European partners thanks to H2020 and ECHORD++ projects
— Mediating skills: I work on the borders between young people, researchers, SME and big companies
— Intercultural skills: I am experienced at working in a European dimension.

Organizational / managerial skills — Whilst attending my PhD, and during coordinated and continuous collaboration I acted as technical manager coordinating mine and the activities of all the working team

Computer skills — competent with most Microsoft Office programmes (ECDL)
— competent with C++
— competent with Asimtool
— competent with Matlab
— competent with OWL
— experience with Prolog
— competent with LabView
— experience with Python
— experience with SolidWorks
— competent with PTCreo
— experience with COMSOL
— experience with Protegè
— competent with Aruco marker detector
— experience with WorldViz
— competent with Move-it

Good knowledge of operative systems — Windows
— Linux
— ROS

Other skills Enjoys apportiond in A working with technology's sensor and sport activities

Driving licence B

ADDITIONAL INFORMATION

Publications   *Novel capacitive technology for human augmented detection towards collision avoidance strategies Marcello Chiurazzi et al.,* **IEEE Sensor Journal (Q1 – IF 3.94)**

Intrinsically Distributed Probabilistic Algorithm for Human–Robot Distance Computation in Collision Avoidance Strategies Marcello Chiurazzi et al., **Electronics (Q2 – IF 2.412)**

Robotic-Assisted Colonoscopy Platform with a Magnetically-Actuated Soft-Tethered Capsule Mauro Verra*, Andrea Firmicieli*, Marcello Chiurazzi* et al., **mdpi cancers (Q1 – IF 5.433)**

Tactile decoding of edge orientation with artificial cuneate neurons in dynamic conditions Udaya Rongala, Alberto Mazzoni, Marcello Chiurazzi et al. , **Frontiers neuroscience (Q2-IF 3.644)**

Frontiers of Robotic Colonoscopy: A Comprehensive Review of Robotic Colonoscopes and Technologies Gastone Ciuti, Karolina Skonieczna-Żydecka, Wojciech Marlicz, Veronica Iacovacci, Hongbin Liu, Danail Stoyanov, Alberto Arezzo, Marcello Chiurazzi et al., Journal of **Clinical Medicine ((Q1-IF 3.303))**

Endoscopic tactile capsule for non-polypoid colorectal tumour detection through hardness classification robust to variable curvature Domenico Camboni, Marcello Chiurazzi et al. (**Submitted**), **IEEE Tansaction of biomedical engineering (Q1 – IF 5.239)**

Visual-Based Defect Detection and Classification Approaches for Industrial Applications—A SURVEY Tamás Czimmermann, Gastone Ciuti, Mario Milazzo, Marcello Chiurazzi et al., **Sensors (Q2 – IF 3.427)**

Defect detection using high-de

nition line-laser scanner Tamas Czimmermann* Marcello Chiurazzi* et al. (**Submitted**). The **International Journal of Advanced Manufacturing Technology (Q1 – IF 2.750)**

Patent   Paolo Dario, Calogero M. Oddo, Gastone Ciuti, Stefano Roccella, Mario Milazzo, Marcello Chiurazzi et al, *Sistema per l'identificazione di difetti su una superficie di almeno una porzione di una scocca e relativo metodo.* 102016000004368, 10 April 2018

Marcello Chiurazzi, Guido G. Garozzo, Gastone Ciuti, Paolo Dario, *Sistema sensibile per il rilevamento aumentato della prossimità.* 02018000007150, 12 July 2018