

SIMONA GANDAH

OBJECTIVE

Passionate and hardworking. I have been committed to become a specialist in medical robotics, research and development of medical devices, now I look forward to apply my expertise in international and stimulating environments.

EXPERIENCE

PHD CANDIDATE, 10/2022 - Current

The Biorobotics Institute of Scuola Superiore Sant'Anna, Pontedera, Italy
Industrial PhD scholarship funded by MEDICA s.p.a

- Design and characterization of intraluminal medical devices
- Signal processing and data analysis
- Development of IoT applications
- Collaboration in the EU-H2020 project "ODIN: Leveraging AI based technology to transform the future of health care delivery in Leading Hospitals in Europe"
- Firmware development of IoT devices and integration of cloud connected software architectures
- Electronic design of custom Printed Circuit Boards (PCBs)
- Tests and validation of Robotic Operating System (ROS) -based mobile robot navigation
- Experimental validation of robotic platforms in hospital pilot study - Technical coordinator of two pilots (UMC,Utrecht; Netherlands and KCLH, Dubai, United Arab Emirates)

VISITING PHD RESEARCHER, 06/2025 - 09/2025

University of Oxford, Oxford, United Kingdom

- Design and characterization of a soft, fully actuated gastrointestinal robotics platform for in vitro testing.
- Development of soft piezoresistive pressure sensors to enable haptic feedback and gesture recognition.

CO-TEACHING AND TUTORING of IoT Fundamentals, 9/2024-9/2024

2nd Doctoral Summer School on Robotics and Intelligent Machines – DRIMS2
2023/2024, Volterra, Italy

RESEARCH SCHOLARSHIP, 02/2022 - 09/2022

ScuolaSuperioreSant'Anna, Pontedera, Italy

- Design and characterization of high-resolution catheters for esophageal manometry (DHRV project in collaboration with MEDICA s.p.a)
- Firmware development for IoT devices (ODIN: Leveraging AI based technology to transform the future of health care delivery in Leading Hospitals in Europe - EU-H2020 project)

TRAINSHIP - LAB TRAINING, 10/2020 - 03/2021**ScuolaSuperioreSant'Anna**, Pontedera, Italy

- Learning Robot Operating System (ROS) on da Vinci Research Kit (dVRK)
- Development of sensorized device (wristband) for the robot tool to integrate it into a sensorized manikin for surgical training
- Creation of a simple graphic overlay for visual feedback
- Skills acquired: ROS, Machine learning, Open cv, da Vinci Research Kit (dVRK configuration)

VICE-PRESIDENT, CO-FOUNDER, 09/2018 - 09/2020**Exemplary Environmental Association**, Amman, Jordan

- Activism and crowdfunding for an NGO in the field of environment and cultural heritage protection
- Public relations with local partners
- Collaboration in the submission of a project proposal for the EU joint program "Partnership for Research and Innovation in the Mediterranean Area (PRIMA)". The consortium was made by seven partners from different countries in the Mediterranean area

TRAINSHIP - RESEARCH TRAINEE, 09/2018 - 10/2018**IRCCS IstitutoOrtopedicoRizzoli**, Bologna, Italy

- Mechanical characterization of human meniscal tissue through experimental tests of confined compression and mapping of the mechanical properties.
- Literature research for scientific review about meniscal tissue
- Skills acquired: expertise in the experimental protocol for indentation and confined compression on human meniscal tissue, expertise in the safety and setup of experimental tests in the Medical Technologies Lab

TECHNICAL SKILLS AND COMPETENCES

Technical skills sum up:

- Python, C++, C, Matlab, Labview
- Machine learning, Neural Networks
- Embedded systems (Arduino, Particle Argon, ST32)
- SolidWorks, COMSOL Multiphysics
- LTSpice, EasyEDA
- ROS

Soft skills sum up:

- Public speaking
- Problem-solving
- Strategic planning
- Public Relations
- Leadership
- Curiosity

EDUCATION**The Biorobotics Institute of ScuolaSuperioreSant'Anna**, Pontedera, Italy, 10/2022 - Current**PhD: Biorobotics**

ScuolaSuperioreSant'Anna, University of Pisa, Pisa, Italy, 10/2019 - 12/2021**Master of Science: Bionics Engineering**

- Curriculum: Biorobotics
- Thesis: "Development of a novel capacitive-based catheter for urethral pressure profilometry" at the Biorobotics Institute (Pontedera, Italy)
- Final evaluation: 110/110

Scuola Superiore Sant'Anna, Italy, Italy, 06/2021 - 06/2021**Seasonal School Artificial Intelligence And Robotics in Extended Reality (AIRONE): Robotics, AI, Virtual Reality**

Università degli Studi di Palermo, Italy, Italy, 10/2016 - 10/2019**Bachelor degree: Biomedical Engineering**

- Curriculum "Diagnostic Technologies"
- Final project: "Correlation analysis in implanted subcortical electrodes during epileptic seizures"
- Final evaluation: 109/110

University of Jordan, Jordan, Jordan, 06/2014 - 08/2014

Arabic to Speaker of Other Languages (ASOL): Languages

- Summer program at the Language Center of the University of Jordan for speakers of other languages.
- Activities: linguistic tutor for a student studying the Italian language.
- GPA: A

University of Oxford and AI for Global Goals, Oxford, 09/2011 - 07/2024

Oxford Machine Learning Summer School (OxML 2024): Mathematical Institute

University of Oxford and AI for Global Goals, Oxford, 07/2024 - 07/2024

Oxford Machine Learning Summer School (OxML 2024): Mathematical Institute

ACHIEVEMENTS

- Winner of the admission competition for the Bionics Engineering program, jointly offered by the University of Pisa and The Biorobotics Institute (Sant'Anna School of Advanced Studies), 30 places.
- First place at the school competition 'Philosophy Olympics', Liceo S. Cannizzaro (Palermo, Jan 2016).
- First place at the regional competition 'Philosophy Olympics' organized by Società Filosofica Italiana (Messina, Feb 2016) and fourth place at the national competition (Rome, May 2016).
- First place at the Karate National Championship - Federazione Italiana Arti Marziali (Rimini, Apr 2014).
- Member of the Young Reviewers Program- IEEE Robotics and Automation Society (RAS)

LANGUAGES

Italian: Mother Tongue, professional

English: C1, professional

French: B1

Arabic: B2

CERTIFICATIONS AND LICENSES

- National professional abilitation - Abilitazione all'esercizio della professione di Ingegnere dell'Informazione, Università di Pisa, Jan 2023
- DELF B1 Ministère de l'Éducation nationale- May 2015
- First certificate B2 - Cambridge International Education - mag 2015
- ASOL B1 - University of Jordan- Aug 2014
- Advanced Training Course: "Updates on GDPR, CTR, MDR, data protection, clinical trials for scientific research purposes, medical devices. Legal support for research, development, and innovation" - S.S. Sant'Anna 2024

PUBLICATIONS AND CONFERENCES

- S. Gandah et al., "An Integrated Sensorized Platform for Environmental Monitoring in Healthcare," in IEEE Sensors Letters, vol. 7, no. 9, pp. 1-4, Sept. 2023, Art no. 5502204, doi: 10.1109/LSSENS.2023.3301836.
- A. Mariani, M. Conti, S. Gandah, C. G. de Paratesi and A. Mencias, "Prototyping a sensorized tool wristband for objective skill assessment and feedback during training in minimally invasive surgery," 2021 International Symposium on Medical Robotics (ISMR), Atlanta, GA, USA, 2021, pp. 1-6, doi: 10.1109/ISMR48346.2021.9661567
- Invited Talk at IEEE SENSORS 2023. Wien, Austria

