

CURRICULUM VITAE


Francesco Scardulla

PERSONAL INFORMATION




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PERSONAL STATEMENT

In addition to being an engineer, I have always been fascinated by the human body mechanics, especially cardiovascular systems, which is why I have devoted 6+ years to mechanical and biomedical research in the measurement field.

I am an extremely creative person, with a fully open mind, so that when faced with a problem I am always willing to consider every alternative solution, indeed I enjoy the challenge of creating innovative and tailored products and devices. I have gained considerable experience working in multidisciplinary teams, thus learning to communicate with experts with different backgrounds.

EDUCATION

2019 Intesa San Paolo Innovation Centre

Theoretical fundamentals and overview of the basic knowledge to manage hi-tech business and start-up a new technological venture.

2015-2018 Ph.D. in Technological Innovation Engineering

University of Palermo, Palermo, Italy

Thesis: "New wearable technologies systems to monitor vital parameters of the cardiovascular system"

Output: **10 Scientific Articles; 8 Conferences, 1 Best paper award, 1 Patent.**

2013-2015 Master Degree in Mechanical Engineering (106/110)

University of Palermo, Palermo, Italy

Thesis: "FEM analysis to evaluate heart ventricular performances: Healthy vs left ventricular noncompaction"

EXPERTISE

Cardiovascular system | Cardiac mechanics | Hemodynamic | Sensors & wearable sensors |

System design | Computational fluid dynamics | Medical imaging processing | PPG sensors |

ECG sensors |

PERSONAL EXPERIENCE

Jun - to date Research fellow at University of Palermo

Department of Engineering, University of Palermo

- Development of optical technologies
- Lidar technologies

Sector: **Automotive, Road safety technologies**

Sep 19- to date Start Up Project Founder

Tripie is an innovative biomedical tech-company holder of a patented technology (3PE Tech) that can be integrated into any wearable device – e.g. a smartwatch – which makes it possible to measure arterial blood pressure with the same accuracy of clinical-grade device and to increase the accuracy of HR signal. My work Includes:

- Technology development, testing and patenting
- Business model generation
- Meetings with investors & partners

Sector: **Wearable, 3PE Technology, Blood Pressure, Heart Rate Accuracy**

Apr 17- Oct 17 Research project

Photonics Engineering & Health Technology Research Group - Carelight Wearable PPG sensor

Wolfson School, Loughborough University, Loughborough, U.K.

- Opto-physiological interaction/modelling towards multiplexed monitoring sensor technology.
- Wavelength attenuation variability among different skin types.
- Implementing new PPG potentiality in order to measure new physiological parameters.

Sector: **Bioengineering, Wearable sensors, PPG sensor, Blood Pressure, Heart Rate**

Sep 15- Nov 15 Cooperation Agreement

Department of Clinical and Community Sciences
Polyclinic & Polytechnic of Milan, Milan, Italy

- Fluid dynamic analysis on carotids of different patients to assess which closure techniques after endarterectomy is less prone to restenosis development

Sector: **Cardiovascular system, Bioengineering, CFD analysis**

Mar 15- Nov 15 Research project

Mathematical Modeling and Numerical Simulation for Biomedicine - MOX Polytechnic of Milan, Milan, Italy

- Fluid dynamic analysis on the cardiovascular system, aimed to investigate hemodynamic complications (i.e. gastrointestinal bleeding) in patients with ventricular assist devices (VAD's).

Sector: **Cardiovascular system, Bioengineering, CFD analysis**

Feb 15- Nov 18 Research project

ISMETT-UPMC, Ri.MED Foundation & University of Palermo
Department of Engineering, University of Palermo, Palermo, Italy

- Fluid dynamic analysis and experimental tests on cardiovascular system related diseases (e.g. pericardial effusion, dilated cardiomyopathy, heart failure, endograft protusion and infolding, aortic diseases, aortic valve diseases, gastrointestinal bleedings)

PERSONAL SKILLS

- Articulate and confident when presenting, both written and oral;
 - Careful to listen the opinion of others, to draw conclusions and make decisions
 - Able to engage people and inspire them to see my point of view;
 - Able to develop a project plan, track progress and see through its complexity;
 - Detail-oriented and natively analytical;
 - Ability to collaborate within a multi-disciplinary team;
 - Looking for continuous process improvements;
 - High level of ambition and commitment;
 - Responsible and self-motivated;
 - Capable to work with little direct supervision and instruction;
 - Solution oriented attitude;
 - Working proactively, and willing to learn and improve constantly;
 - Friendly and easy-going;
 - Ability to deal and work in multidisciplinary teams.
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FURTHER INFORMATION

Prizes and Awards

- Best Paper Award – 1st prize – University of Palermo - 2018
- Start Cup Palermo – 1st prize – Tripie, smart blood pressure detection - 2019
- Start Cup Sicily – 1st prize – Tripie, smart blood pressure detection - 2019
- Innovation Health Care Award (AICC) – Tripie, smart blood pressure detection - 2019

Patent

The patent concerns a new technology that can be integrated into any wearable device – e.g. a smartwatch – without altering the size and it makes it possible to measure arterial blood pressure with the same accuracy of clinical-grade devices. The technology relies on the very same PPG sensors widely used in consumer applications for the measurement of heart rate, yet it provides the blood pressure value, which was not available so far, the blood oxygenation value as well as higher quality of heart rate signals, especially during physical activities. **(WO 2020/016139)**

Scientific Papers

18 international scientific articles regarding: cardiovascular system – cardiac mechanics – cardiovascular diseases - sensors – wearable sensors for physiological monitoring.

Author Id: 55941416400; **Scopus:** /authid/detail.uri?authorId=55941416400

Scientific Conferences

- About 20 international and national conferences in Europe and United States
- Member of a scientific conference organization committee - ESB ITA - Biomechanical Challenges in Cardiovascular Physiopathology (2016) – Palermo, Italy
- Invited speaker to deliver a Seminar called “A fluid-dynamic computational study on celiac trunk in patients with ventricular assist device” at the Modeling and Scientific Computing (MOX), Polytechnic of Milan, Milan, Italy.