

Mattia Cosimo Devangelio

January 28, 1995 – Manduria (TA), Italy

Nationality: Italian

Permanent Address: 74020 Taranto, Italy

Current Address: 10129 Turin, Italy

E-mail: mattdev6@gmail.com

E-mail: mattiacosimo.devangelio@studenti.polito.it

Phone: +39 3490642514

[LinkedIn Profile](#)

[GitHub Profile](#)

Education

- 2020 Final Project in Biomedical Engineering
University of California, Los Angeles
David Geffen School of Medicine at UCLA
- 2018–2020 Master's Degree in Biomedical Engineering
Polytechnic University of Turin
Final grade: 110/110 cum laude

Subjects: Applied mechanics to biomedical systems, Biomechanics of solids, Biomechanical design, Biomedical signal processing, Biomimetic systems, Bionanotechnologies, Cardiovascular biomechanics, Classification and interpretation of biomedical data, Design of prostheses and artificial organs, Experimental biomechanics and biodynamics, Fluid biomechanics, Materials for Bioengineering, Medical image processing, Physical principles of thermal therapies, Sensors and measurements for biomedical applications.

Thesis: Design of wearable strain sensors based on stretchable electronics for human motion monitoring applications.
- 2014–2018 Bachelor's Degree in Biomedical Engineering
Polytechnic University of Turin

Subjects with the best results: Active implantable devices (30L), Biomedical instrumentation (30L), Medical images (30L), Computer science (30), Electronics (30), Signal analysis (30).

Thesis: Final exam based on training.
Training: Professional training in medical image analysis.
Biolab Laboratory – Department of Electronics and Telecommunications, Polytechnic University of Turin.
Description: Image segmentation of histological images performed by both automatic method based on mathematical algorithms and manual method. Analysis of the processed images and comparison of the performed approaches in order to establish the reliability and accuracy of the automatic execution.
- 2013 High School Diploma: Scientific Diploma
Liceo Scientifico Galileo Galilei – Manduria, Italy
Final grade: 100/100
-

International Experience

- Feb 2020 – Jan 2021 Visiting Graduate Researcher
University of California, Los Angeles – CA, United States

David Geffen School of Medicine at UCLA – Department of Orthopaedic Surgery
Member of the Billi Research Group at the BilliLab

California NanoSystems Institute at UCLA
User of the UCLA Nanofabrication Laboratory (NanoLab)

Research field: Design of wearable sensing systems for human motion monitoring.
Description: Development of wearable sensors based on stretchable electronics starting from material selection and structure design strategies; polymer-based conductive composites fabrication, samples electrical characterization, electromechanical response analysis, analog-to-digital conversion methods, real-time data acquisition, data processing, human motion analysis.

Language skills

Mother tongue: Italian

Other languages: English - proficient user, Certificate IELTS British Council

Skills and knowledge

Biomechanics, Bioelectronics, Wearable systems, Sensor design, Digital electronics, Signal processing, Image processing, Medical imaging, Electronic instrumentation.

Programming language: C, C++, MATLAB, Simulink.

Integrated development environments: Xcode, Arduino IDE, Processing IDE.

Boards and Microcontrollers programming, Espressif (ESP32 series), Arduino boards, Embedded systems, Analog-to-Digital Converters, high resolution Capacitance and Voltage-input AD77XX converters, ESP32 ADC channels, Multiplexing strategies, Serial communications, 2-wire Interface, I2C Protocol.

3D Computer aided-design, Autodesk Fusion 360, Autodesk Inventor, Rhino 3D, SolidWorks, Mimics, 3D Printing, Fused Deposition Modeling (FDM), 3D Slicer, PrusaSlicer, Finite element analysis, MSC Nastran Patran, Electronic circuit design, Fritzing, Eagle, OmniGraffle, Office suite, LaTeX, iWork.

Specific experiences

- Design of wearable sensing systems with more focus on flexible and stretchable structures.
 - Fabrication of polymeric structures (silicon-based polymer), conductive composites, conductive network creation and percolation analysis.
 - 3D CAD models for single and multi-material FDM-based 3D printing using conductive and non-conductive elastomeric filaments. Design of custom 3D printed molds.
 - SEM analysis of cross-sectional samples, particle analysis, image segmentation.
 - Scripts for opening data files, executing plots, data processing, statistical data analysis, data saving and real-time signal visualization.
 - Measurement and characterization instrumentation, probe station (qualified by specific training), electrical characterization.
-

Personal description

According to the personal educational path, my main background focuses on the biomedical engineering area with interest in interdisciplinary relations with other scientific areas. During the experience abroad I had the possibility to conduct an important research study applying the theoretical knowledge to practical aspects. Also, I have acquired a strong ability to work both in group and independently, improving the ability to learn new concepts quickly. The youth period as a member of the Italian Scout Association represented for me a way to understand the importance of making relationships with people and helping each other. I have always had a strong artistic inspiration, based on a passion for drawing.