Antonio **Cangelosi**

Biomechanical Engineering

About me

Master's degree in Biomechanics from Politecnico di Torino and a Bachelor's degree in Biomedical Engineering from Università degli Studi di Palermo. My research experience includes medical image elaboration, 3D printing, and the application of augmented reality in orthopedic surgery. I have been Research Fellow at Politecnico di Torino. My skills include coding in C#, Matlab, Python, and expertise in various software and libraries relevant to image processing, computer vision and 3D modeling.

Personal

Nationality: Italian
Birth: November 16, 1999
Adress: Corso Giambone 87, 10134

Areas of specialization

Chemistry, Biomaterials and Biotechnology • Medical Devices • Biomechanics • 3D Printing • Imge Elaboration • Computer Vision • Mixed Reality

Interests

Chemistry, Coding, Computer Graphics, Design Thinking, Fast Prototyping Music, Mechanics, Medicine.

Antonio Cangelosi

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Curriculum

Apr 2024–Now — **Research Fellow**
· Politecnico di Torino - 3D Lab
Research Activity Training
Medical Image Elaboration and 3D Printing
Surgery guides for Maxillofacial Applications (SMA)

2017 & 2024 — **Internship**
· Istituto Fondazione G.Giglio - Cefalù
Medical Devices Safety Standards verification and Risk Mitigation
Managment of equipment lifecycle: acceptance testing, preventive maintenace and Health Technology Assesment (HTA) processes

2017 — **Internship**
· Università degli Studi di Palermo
Research and Experimentation in Analytical, Organic and Instrumental Chemistry Laboratories

Education

2024 — **Biomedical Engineering (M.Sc)**
Biomechanics
Politecnico di Torino
102/110

2021 — **Biomedical Engineering (B.Sc)**
Biomaterials & Medical Devices
Università degli Studi di Palermo
110/110L

2018 — **Chemistry, Materials & Biotechnology (H.S)**
Environmental Biotechnology
ITIS E.Torricelli
100/100

Skills

Coding	*C#, Matlab, Python, LaTeX*
Libraries	*Filterpy, Keras, Mediapipe, Monai, Matplotlib, Numpy, OpenCV, TensorFlow, Tkinter, SciPy, Scikit-image*
CAD, CG, PaaS	*Blender, Fusion 360, Rhinoceros 3D, SimVascular, Unity, vmtk, 3D Slicer*
Lab	*UV-Vis Spectrometry, FTIR Spectrometry, Bacterials Coltures, Organic Synthesis, Optical Microscopy*
VR, AR, MR, CV	*MRTK, Meta Horizon, Hololens 2, Meta Quest 3 & Pro,A. Kinect DK, Femto Bolt, Intel RS Depth Camera D435i*

Thesis

2024 Image-Guided Surgery and Augmented Reality in Orthopedic Surgery: a perspective on reducing Iatrogenic Nerve Damage in Elbow
Dipartimento di Elettronica e Telecomunicazioni - Politecnico di Torino
Dipartimento di Neuroscienze "Rita Levi Montalcini" - Università di Torino
Intravides
Prof. Corrado Cali, Prof. Filippo Molinari, Dott. Massimo Salvi

2021 Deep Learning in Cardiac Mechanics Simulation
Università degli Studi di Palermo - Dipartimento di Ingegneria
Prof. Salvatore Pasta

Languages

Italian — mother tongue
English — B2

Scientific Works

2025 Validation study on iatrogenic nerve damage reduction using Augmented Reality on elbow phantom.
Journal Article (ACCEPTED) (CiteScore 16.8 | Impact Factor: 7.2) - Mayo Clinic Proceedings: Digital Health.

2025 Augmented Reality simulation framework for minimally invasive orthopedic surgery.
Journal Article (CiteScore 11.7 | Impact Factor: 7.0) - Computer in Biology and Medicine Press.

2023 Mixed Reality for Orthopedic Elbow Surgery Training and Operating Room Applications: A Preliminary Analysis
Conference Article - STAG 2023.

2023 A Gaze Detection System for Neuropsychiatric Disorders Remote Diagnosis Support.
Conference Article - STAG 2023

Antonio Cangelosi · Corso Giambone 87 · Turin · +39/389 9931700
antonio.cangelosi@polito.it