



Alberto Rota

Biomedical Engineer

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ABOUT ME

I'm a passionate and enthusiastic biomedical engineering student currently working on assistive strategies for surgical robots. Driven by a learning-prone attitude, I successfully contributed to and led a number of team projects on robotics, artificial intelligence and embedded devices.

Looking towards committing to a relevant project in the healthcare industry.

EDUCATION

MSc in Biomedical Engineering, Avg. 27.8/30

> September 2020 - expected December 2022

Politecnico di Milano, IT

Thesis: *Active Constraints in Robot-Assisted Minimally Invasive Surgery* at NEARLab. Supervisor: Prof. Elena de Momi, PhD

Erasmus Exchange Program

> February 2022 - June 2022

University of Liege, BE

Joint thesis with Politecnico di Milano, visiting fellow at Multibody and mechatronics systems LAB

BSc in Biomedical Engineering, 104/110

> September 2017 - July 2020

Politecnico di Milano, IT

Thesis: *Analysis on the 3D variability of in-vitro microvascular networks*. Supervisors: Prof. Maria Laura Costantino, PhD; Prof. Luca Possenti, PhD

High School Scientific Diploma, 83/100

> 2012-2017

Lorenzo Mascheroni High School, Bergamo IT

PERSONAL INTERESTS

Amateur cook and enogastronomic enthusiast

Blues guitar player

Private tutor for university students

Waiter & Barista apprentice

Certified UAS operator, OPEN category (2022)

I authorize the processing of personal data according to EU Regulation 679/2016 or according to the reader's local regulations if not in the EU

RELEVANT WORK

μVES

> February 2020 - July 2022

A fully automated algorithm for the topo-morphological analysis of 3D microvascular networks images from confocal microscopy

Mastered problem-solving and teamworking skills

ECC Pump conformity test

> September 2021 - March 2022

An IR-based embedded device for testing the industrial/commercial conformity of centrifugal pumps for extra-corporeal circulation. *Best Development* awardee at the 2022 Capstone Project event - In collaboration with Qura s.r.l. *Mastered time management and leadership skills*

Deep Learning for SuperResolution of CT scans

> November 2021 - December 2022

A CNN for data-driven upscale and noise reduction of CT scans of the abdomen and pelvis

RESEARCH PAPERS

A three-dimensional method for morphological analysis and flow velocity estimation in microvasculature on-a-chip

Rota A., Possenti L., Offeddu G.S., Senesi M., Stucchi A., Venturelli I., Rancati T., Zunino P., Costantino M.L., Kamm R.D. - IEEE Transaction on Biomedical Engineering [Submitted]

A Unity-based Da Vinci Robot Simulator for Surgical Training

Fan K., Marzullo A., Pasini N., **Rota A.**, Pecorella M., Ferrigno G., De Momi E. - IEEE BioRob2022 [Submitted]

Improving Surgical Robotics Training with Haptic Virtual Fixtures: An Experimental Study

Rota A., Fan K., De Momi E. - I-RIM3D 2022 [Submitted]

SKILLS

Language

Italian: Native speaker

English: TOEIC Level C1, 2020

French: Level A2+

Technical

Programming/IT: Python, C++, C, MATLAB, C#, Git, Docker

AI: TensorFlow+Keras framework

CAD: AutoDesk Inventor, Blender

Engineering: ROS, OpenFOAM, ImageJ, Unity

Hardware: Microcontrollers, 3Dprinting, KiCAD

Office: Microsoft Office Package, LaTeX