Alberto Rota

Biomedical Engineer

Milan, Italy

Born: 1st July 1998

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ABOUT ME

I'm a passionate and dedicated biomedical engineer currently working on Computer Vision Deep Learning algorithms for surgical robotics. Driven by a learning-prone attitude, I successfully led and contributed to and a number of team projects on robotics, artificial intelligence.
Determined to make a difference in the healthcare industry. I'm cooking and enogastronomy enthusiast, blues guitar player and passionate about travelling.

EDUCATION

PhD in Bioengineering
> February 2023 - Ongoing
Asensus Surgical & NEARLabMRS - Politecnico di Milano, IT
Working on Deep-Learning and Computer Vision algorithms for 3D reconstruction [NDA protected]

MSc in Biomedical Engineering
> September 2020 - December 2022
Politecnico di Milano, IT
Thesis: *Implementation and Assessment of an Augmented Surgical Training Curriculum with a* daVinci *robot: an experimental study* at *NEARLab Medical Robotics*

Erasmus Exchange Program
> February 2022 - June 2022
University of Liege, BE

SKILLS

Language
Italian: Native speaker
English: TOEIC Level C1, 2020
French: Level A2+

Technical
Programming/IT: Python, C++, C, MATLAB, C#, Git, Docker
AI: PyTorch, TensorFlow, Keras, SciKit
CAD: Autodesk Inventor, Blender
Engineering: ROS, OpenFOAM, ImageJ, Unity
Hardware: Microcontollers, 3Dprinting, KiCAD
Office: LaTeX, Microsoft Office Suite
Graphics: InkScape
WebDev: Designer and maintainer of *NEARLab's Website*

This CV was last updated on August 25th 2023.
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

Clicking will open a GitHub page
Clicking will open a research paper
Clicking will open a webpage

RELEVANT WORK

µVES
> February 2020 - July 2022
A fully automated algorithm for the topo-morphological analysis of 3D microvascular networks images from confocal microscopy, with DL image segmentation
Mastered problem-solving and teamworking skills

ECC Pump conformity test
> September 2021 - March 2022
An IR-based embedded device for testing the conformity of centrifugal pumps for ECC - 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

STEVE
> February 2022 - December 2022
A haptic-enhanced surgical robotics VR simulator for surgical training
Mastered communication skills

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. - Bioengineering & Translational Medicine 2023

Recent Advancements in Augmented Reality for Robotic Applications: A Survey
Fu J., **Rota A.**, Li S., Zhao J., Liu Q., Iovene E., Ferrigno G., De Momi E. - MDPI Actuators 2023

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

Improving Surgical Robotics Training with Haptic Virtual Fixtures: An Experimental Study
Rota A., Fan K., De Momi E. - I-RIM3D 2022

AWARDS

> *Best Innovation* *award* at the 2023 Hamlyn Surgical Robotics challenge
> *Best Development* *award* at the 2022 Capstone Project event at Politecnico di Milano