Alberto Rota

Biomedical Engineer

Milan, Italy

Born: 1st July 1998

📞 +39 3462142633
✉ alberto_rota@outlook.com
in linkedin.com/in/albe-rota
⬤ github.com/alberto-rota

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 Website* 🌐

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

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

Augmented Reality and Shared Control Framework for Robot-Assisted Percutaneous Nephrolithotomy 🗎
Fu J., Pecorella M., Palumbo M.C., Iovene E., **Rota A.**, Ferrigno G., De Momi E. - IEEE ICRA 2023

AWARDS

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