

# Alberto Rota

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Born: 1<sup>st</sup> July 1998 in Bergamo, Italy



## EDUCATION

- **MSc in Biomedical Engineering - Ongoing**  
Politecnico di Milano, IT  
Thesis: *Active Constraints in Robot-Assisted Minimally Invasive Surgery* at NEARLab. Supervisor: Prof. Elena de Momi, PhD  
September 2020 - expected December 2022
- **Erasmus Exchange Program**  
University of Liège, BE  
Joint thesis with Politecnico di Milano, visiting fellow at *Multibody and mechatronics systems LAB*  
February 2022 - June 2022
- **BSc in Biomedical Engineering, 104/110**  
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  
2017-2020
- **High School Scientific Diploma**  
Lorenzo Mascheroni High School, Bergamo IT  
2012-2017

## SKILLS

- **Language**  
Italian: *Native speaker*  
English: *Fluent - TOEIC Level C1, 2020*  
French: *Elementary - Level A2+*
- **Technical**  
Programming: *Python, C++, C, MATLAB, C#*  
AI: *Tensorflow+Keras framework*  
CAD: *AD Inventor, Blender*  
Engineering: *ROS, OpenFOAM, ImageJ, Unity*  
Hardware: *Microcontrollers, 3Dprinting, KiCAD*
- **Soft Skills**  
Problem-solving skills – Organizational and leadership skills – Ability and propensity to work in a team – Time-management skills

## MAJOR PROJECTS

- **$\mu$ VES**  
A fully automated algorithm for the topomorphological analysis of 3D microvascular networks images from confocal microscopy.  
(*Research paper pending for review*)
- **ECC Pump conformity test**  
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.
- References for Minor projects are available at [this GitHub page](#)

## RESEARCH

- *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 [Review Pending]
- *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. - Microvascular Research [Review Pending]

## CERTIFICATIONS

- TOEIC certification for the english language, level C1
- MATLAB Fundamentals, MATLAB Programming Techniques, MATLAB for Data Processing and Visualization from *MathWorks Training*
- AutoCAD Essential Training, AutoCAD Surface Model Design from *LinkedIn Learning*

## PERSONAL INTERESTS



Cooking



Music



Gardening



IoT