

BASSEM DAHROUG

PhD, Mechatronics Engineer

<https://bdahroug.github.io/> @ bdahroug@gmx.com Toulouse, France

Experienced robotics and mechatronics engineer with a PhD in Engineering Sciences and with ten years of hands-on experience in space robotics, surgical robotics, and advanced control systems. Passionate about developing autonomous systems and digital twins for challenging environments. A full version of my CV is available on the website¹.

EXPERIENCE

Robotics Engineer - Control & Mechatronics

ROVIAL Space

03/2023 – 06/2025 Toulouse, France

Participate in the research and development of robotic systems for on-orbit servicing applications

- design and develop mechatronic systems by using different robotic structures (e.g., manipulator arm, legged robot) for performing assembly and repair tasks;
- develop a low-level and high-level controllers for guiding the robotic system by computing forward and inverse kinematics, as well as dynamics ones;
- create experimental proof-of-concept to validate the developed robotic system;
- collaborates with other departments, such as Structure and Space, to gather requirements and specifications.

Mechatronics Engineer

AMAROB Technologies

06/2021 – 11/2022 Besançon, France

Participation in different innovative projects

- design, simulation, manufacturing, and programming of mechatronic devices, in particular, the micro-robotic systems dedicated to intracorporeal laser surgery that AMAROB proposes;
- validation of the devices developed with AMAROB's collaborators, including partner hospitals and AMAROB's customers.

EDUCATION

Ph.D. in Engineering Sciences

UBFC (Université Bourgogne Franche-Comté)

11/2014 – 02/2018 Besançon, France

Dissertation: *Minimally Invasive Surgery in the Middle Ear: a guided micro-robotic system to efficiently remove cholesteatoma.*

Joint M.Sc. in Mechatronics and Micro-Mechatronics Systems

ENSMM (Ecole National Supérieur de Mécanique et des Microtechnique) and EPI (Escuela Politécnica de Ingeniería de Gijón)

09/2012 – 09/2014 Besançon, France and Gijón, Spain

Master thesis: *Design, modelling and control of a contactless modular conveyor.*

SKILLS & KNOW-HOW

Mechatronic design	● ● ● ● ●
Robotics	● ● ● ● ●
Automatic control	● ● ● ● ●
Scientific programming	● ● ● ● ●
Mechanics	● ● ● ● ●
Electronics	● ● ● ● ●
Robotic experimentation	● ● ● ● ●
Organization, rigor and autonomy	● ● ● ● ●
Analysis, synthesis and solving problems	● ● ● ● ●
Oral and writing communication	● ● ● ● ●
Project Collaboration	● ● ● ● ●

COMPUTER SKILLS

FreeCAD	Solidworks	CATIA V5
G-code		
KiCAD	Egale	Proteus
Matlab/Simulink	Octave	
COMSOL Multiphysics		
C/C++	ViSP	OpenCV
Python	Java	micro-controller
TCP/IP	I2C	GIT
Webots	RBDyn	DART
Magnum	VTK	Blender
Linux	Windows	

LANGUAGES

English	French
Arabic	Spanish

¹Long CV: https://bdahroug.github.io/assets/DAHROUG_longCV.pdf