



# BASSEM DAHROUG

PhD, Mechatronics research engineer

@ bdahroug@gmx.com

📍 Besançon, France

🔗 <https://bdahroug.github.io/>

## EXPERIENCE

### Researcher, Post-doctoral

Institute FEMTO-ST, Dept. AS2M (Automatique et Systèmes Micro-Mécatroniques)

📅 9/2018 – 9/2020

📍 Besançon, France

Participation in the INSERM project "ROBOT" (Robotics and Optical coherence tomography for optical BiOpsy in the digestive Tract)

- design and development of a prototype in order to validate and integrate the distinct technological and methodological proposed by the different project's teams,
- implement a visual servoing scheme based on the 3D imaging (C-scan) obtained from the OCT for guiding a robot during the intra-operative phase in order to perform a repeatable optical biopsy.

### Research assistant, PhD student

Institute FEMTO-ST, Dept. AS2M

📅 11/2014 – 2/2018

📍 Besançon, France

Early research stage of the project " $\mu$ RMES" (Micro-Robot for Middle Ear Surgery)

- analysis of the clinical need for cholesteatoma surgery,
- development of an image-guided micro-robotic system dedicated to this procedure.

## EDUCATION

### Ph.D. in Engineering Sciences

UBFC (Université Bourgogne Franche-Comté)

📅 11/2014 – 02/2018

📍 Besançon, France

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

### double degree M.Sc. in Mechatronics and Micro-Mechatronics Systems

ENSM (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 title: *Design, modelling and control of a contactless modular conveyor.*

### B.Sc. in Mechanical Engineering

AAST, College of Engineering Studies and Technology, Mechantronics Depart.

📅 09/2011 – 09/2006

📍 Alexandria, Egypt

Graduation project title: *Mobile robot control for parking manoeuvre.*

## SKILLS & KNOW-HOW

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

## COMPUTER SKILLS

Solidworks	CATIA V5	Creo
C/C++	ViSP, OpenCV	PCL, VTK
micro-controller	Ladder	Java
JS, HTML, CSS		
Matlab/Simulink	Octave	
Egale	Proteus	Quartus
CMSOL Multiphysics	Blender	
Ubuntu	Windows	

## LANGUAGES

🇪🇬 mother tongue    🇫🇷 fluent level C1

🇬🇧 usual level B2    🇪🇸 usual level B2

## REFEREES

### Prof. Nicolas Andreff

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✓ UBFC, Institut FEMTO-ST

### Dr. Brahim Tamadazte

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✓ CNRS, Institut FEMTO-ST