

Lilyan Leblanc



Nationality: French

 contact@lilyan-leblanc.com | Full, clean driving license

Robotics Engineer (PhD) – Surgical Applications

Engineer with a PhD in robotics and over 7 years of experience across both industry and academia, specializing in surgical robotics. I apply my expertise within multidisciplinary teams to develop innovative solutions for surgeons worldwide.

Technical Skills

- Develop surgical robotic solutions using C++, Git, Matlab, ROS2, and Python
- Design non-rigid 3D medical image registration methods
- Manage development projects using Agile methodology
- Automate and optimize industrial and medical processes in compliance with ISO 13485
- Collaborate effectively with multidisciplinary teams (engineering, research, clinical)
- Communicate technical results to diverse audiences
- Apply critical thinking to the experimental validation of new technologies

Professional Skills

- Critical thinking
- Collaboration and teamwork
- Interpersonal communication
- Emotional intelligence

Professional Experience

2021-2025 | PHD STUDENT IN SURGICAL ROBOTICS | INSTITUT DES SYSTEMES INTELLIGENTS ET DE ROBOTIQUE - SORBONNE UNIVERSITE - FRANCE

- Developed robotic solutions for automatic breach detection during pedicle screw insertion in spine surgery (patent filed)
- Designed non-rigid 3D medical image registration tools for surgical trajectory transfer
- Contributed to software development for planning and execution of robotic surgical tasks (C++, ROS2, MATLAB, Git)
- Conducted experimental validations on ex-vivo, cadaveric, in-vivo, and animal models
- Participated in the FAROS (H2020) European research project in collaboration with multiple academic and industrial partners
- Taught Master's students in experimental robotics, control systems, and C programming

2018-2021 | MEDICAL ROBOTICS ENGINEER | ZIMMER BIOMET ROBOTICS - FRANCE

- Designed, developed, and validated an automatic calibration solution for the ROSA medical robotic system (C++, Visual Studio 2015, VAL3)
- Automated calibration processes within an Agile team, contributing to a 15% reduction in manufacturing time
- Analyzed the error chain of the robotic system and conducted a state-of-the-art review of serial robot calibration methods
- Contributed to Computer System Validation, equipment and procedures validation, risk analysis, NCRs, and CAPAs (ISO 13485, 9001)
- Contributed to lean manufacturing initiatives and automation of inspection, calibration, and production processes
- Independently planned and managed small-scale technical project

Education & Certifications

2021-2025 | PHD IN SURGICAL ROBOTICS | INSTITUT DES SYSTEMES INTELLIGENTS ET DE ROBOTIQUE - SORBONNE UNIVERSITE - FRANCE

2023 | UNIVERSITY DEGREE IN BIOLOGICAL AND MEDICAL ENGINEERING | SORBONNE UNIVERSITE - FRANCE

- Funding, protection and translation of biomedical research into practical applications
- Entrepreneurship, funding and innovation strategy in a regulated biomedical environment

2016-2018 | MASTER OF SCIENCE IN IMAGING, ROBOTICS AND BIOMEDICAL ENGINEERING | TÉLECOM PHYSIQUE STRASBOURG - STRASBOURG UNIVERSITY - FRANCE

- Valedictorian. Coursework included Computer Science, Robotics, Control Systems, Computer Vision, Image Processing, and Signal Processing.

2015-2018 | HEALTHCARE INFORMATION TECHNOLOGY ENGINEER | TÉLECOM PHYSIQUE STRASBOURG - STRASBOURG UNIVERSITY - FRANCE

- Valedictorian. Coursework included Computer vision, Control Systems, Robotics, Computer science, Signal Processing, Biomechanics, Electronics, Biology

Language Skills

- French: Native
- English: C1 – TOEIC 970-995
- German B1
- Spanish: A2

Activities and Interests

- Advanced scuba diver and master freediver
- Competitive triathlon
- Acrobatic Rock and Roll and contemporary dance
- Cinema (once to twice a week)

Publications and patents

