

Aude Merveille IVALA BOUSSAMBA TSIGBE

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PROFESSIONAL SUMMARY

I am a biomedical engineering student looking for an internship in medical robotics. I have a strong background in medical device design, physiological sensor integration, and data processing. Used to working at the intersection of engineering, medicine, and research, I bring a multidisciplinary perspective ranging from mechanical design to software and data analysis. Motivated and rigorous, I aim to contribute to the development of innovative robotic solutions to improve diagnosis, rehabilitation, and patient care.

EDUCATIONS

- Engineering program at **ESPITA Private Higher School of Engineering and Applied Technology** Year : 2023-2026
- Preparatory class for the **West African Polytechnic University – UPOA** Year : 2021-2023
- Baccalaureate of science from **André Raponda Walker Middle & High School** Year: 2020-2021

SKILLS

- **Programmation & AI** : Python (pytorch, open CV), C/C++ (Arduino, microcontrôleur), Image Processing (Nitfi, IRM, Segmentation 3D), Monai
- **Embedded electronics and systems** : Arduino, Esp-01, biomedical sensors (max 30102), simple circuit design and actuator/sensors
- **Robotics & Biomedical** : medical application (patient location, biomedical monitoring), human-machine interface (Alzheimer's assistance)
- **Tools & Softwares** : VS Code, Simulink, MATLAB, SolidWorks, Blender, 3Dslicer, Jupiter notebook, Google colab, ROS2, IsaacSim, Unity

PROJECTS

- **Interactive light show (Project)** – 3x3 matrix designed for children (ages 4–10) with attention disorders or ASD, promoting visual, cognitive, and motor stimulation.
- **Embedded system for autonomy assistance** – Design of a device integrating sensors and wireless communication to assist dependent persons.
- **Voice emotion recognition model** – Design of an AI system for emotion analysis, with potential applications in medical assistance and human-machine interaction.
- **3D design of a sand-glass machine (in progress)** – Development of a mechanical device to transform glass into reusable sand.
- **3D reconstruction of the prostate from MRI scans (in progress)** – Design of a system for analyzing and visualizing anomalies.

PROFESSIONAL EXPERIENCE

- **Immersive internship at Salhouli University Hospital in the orthopedic department (1 month)** - assist with operations, learn about and understand the equipment, understand the needs of medical staff Year : 2023-2024
- **Internship at the Habib Nouria Imaging Center (2 months)** - Creation of AI for interactive prostate segmentation with decision support, and commercial approach Year : 2024-2025

LANGUAGES & CERTIFICATIONS

English : intermediate level

French : native

Ewe : beginner

Certificate of participation in the ISO 9001 V 2015 standard

Certification to “Medical Device Requirements”

Certification to “Regulatory Requirements for Medical Devices”