




# Emmanuel ALAO

Automation & Robotics Engineering

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## PROFESSIONAL SUMMARY

Ph.D. in Automatic Control and Robotics with a strong background in embedded systems, sensor/actuator integration, and software development. I combine solid analytical skills from academic research and technical skills with excellent problem-solving abilities. I have proven experience collaborating with cross-functional organizations to successfully deliver projects in both independent and team-driven settings.



## WORK EXPERIENCE

### Research and Teaching Assistant

2025 – Present

[UTC Compiègne](#)

*Compiègne (France)*

- Teaching and supervision of laboratory sessions in automatic control and cyber-physical systems
- Supervision of undergraduate and graduate practical courses in linear/nonlinear control, including system modeling, identification, open and closed-loop control performance analysis
- Guidance of graduate-level students in planning, control, and decision-making for autonomous single and multi-agent systems, integrating localization, uncertainty handling, and real-time/IoT communications
- Introduction to and supervision of MATLAB, Python and C/C++ based project development using simulation platforms (Robotarium, Quanser) and real robotic systems (QCar2, Renault Zoe Car)

### Control & Robotics Integration Engineer

2021 – 2022

[ACENTAURI Inria](#)

*Sophia Antipolis (France)*

- Integration of perception/localization sensors and computers (Nvidia Jetson AGX) on the Scout mini robotic platform under Ubuntu and ROS
- Calibration of sensors: cameras (360°), IMU, LiDAR and working with partners (Safran, Novocap) to Integrate Deep Learning End-to-End algorithms (MOBIDEEP Project)
- Development of a reactive and proactive autonomous navigation strategy
- Preparation, demonstration and documentation for guiding a visually impaired person

### Control & Robotics Engineer – Intern

2019 – 2020

[CHORALE Inria](#)

*Sophia Antipolis (France)*

- Optimal perception uncertainty-aware proactive navigation
- Development of robot control strategy in a future time horizon (CROWDBOT H2020 project)
- Simulation and Implementation of developed algorithm in MATLAB -> Python-> ROS Gazebo and on a real robot.

### Computer Engineer

2017 – 2018

[Christopher University](#)

*Mowe (Nigeria)*

- Internet/web Server, CCTV and Computer Maintenance
- System software Management and installation
- Networking and SQL Database Management



## EDUCATION

### PhD – Automatic Control and Robotics

2022 – 2025

[Université de Technologie de Compiègne \(UTC\)](#)

*Compiègne (France)*

### Masters – Control and Robotics (Advanced Robotics)

2018 – 2020

[Ecole Centrale de Nantes \(ECN\)](#)

*Nantes (France)*

### Bachelors – Computer Engineering

2011 – 2016

[Federal University of Technology \(FUTMinna\)](#)

*Minna (Nigeria)*

## SKILLS

C/C++, Python, MATLAB, ROS 1 & 2, Catia, Fusion 360, Arduino, Nvidia Jetson, STM 32, Drone Piloting, Git, Django, JavaScript, SQL

## PUBLICATIONS/CONFERENCES

- “Reliable multi-level optimization for safe predictive control of Autonomous vehicles to avoid uncertain multimodal PLEVs,” **IROS’25, Hangzhou, China**
- “Hybrid Optimization method for Safe Autonomous navigation under Uncertainty” **IFAC-IAV’2025, Phoenix, Arizona, USA**
- “Multi-Risk Assessment and Management in the Presence of Personal Light Electric Vehicles”. **ICINCO’24, Porto, Portugal**
- “Reliable Risk Assessment and Management using Probabilistic Fusion of Predictive Inter Distance Profile for Urban Autonomous Driving”. **ECC’24 Stockholm, Sweden**
- “Uncertainty-aware Navigation in Crowded Environment”. **ICARCV’22, Singapore, Singapore**
- “Multi-Priority-Based Strategy for Risk Assessment and Management in the Presence of Multiple Personal Light Electric Vehicles”. **Springer Nature Computer Science, 2025**

## ACHIEVEMENTS

- Co-Supervisor winning Team** of Free Urban Challenge at UTAC 2025
- Best Student Paper ICINCO’24**, Porto, Portugal.
- Scholar** Total E&P Nigeria/Quai d’Orsay International Master’s Degree Scholarship 2018-2020.
- President** Sustainable Development Goals (SDGs), NYSC, Mowe, 2017-2018.
- First Class Honors**, Computer Engineering, FUTMinna, 2016.
- Best Project** Computer Engineering, FUTMinna, 2016.
- V. President** Junior Engineering and Technology Students (JETS) Club, 2011.

## INTEREST

- Fitness
- DIY electronics
- Reading Fiction

## LANGUAGES

English

French