3rd-year PhD student passionate about research and the automotive industry.

RHANDY CARDENAS

CONTACT DETAILS

Peruvian
Gaillon 27600, France
06 58 64 62 85
rhandy.cardenas-curo@hds.utc.fr
linkedin.com/in/rhandy-cardenas
27 years

SKILLS

- **Simulation:** IPG CarMaker, Carla
- **Robotics:** ROS, Gazebo
- **Office Suite:** Pack Office.
- **Software & Tools:** Visual Studio, LabVIEW, Matlab, Simulink.
- **Languages:** C, C++, C#, VHDL, Python.
- **Electronics:** PSIM, Design Spark, Eagle, Mbed, Arduino.
- **OS:** Windows, Linux.
- **CAD:** Catia V5, SolidWorks, CREO, AutoCAD.
- **Automation:** TIA Portal (Grafcet, Ladder), ETS (KNX Protocol).

LANGUAGES

Spanish	Native speaker
French	C1 level
Anglais	C1 level
German	A2 level

INTERESTS

Basket Robotics Travel Lecture

EDUCATION

2023-2026 — **PhD Candidate – Control and Robotics**
Université de Technologie de Compiègne & Renault Group (Industrial Research)

2019-2023 — **Mechanical Eng. Specialization in Mechatronics**
Université de Technologie de Compiègne

2017-2019 — **Electrical Engineering and Industrial Computing**
IUT Nice Côte d'Azur

2015-2017 — **Mechatronics Engineering**
National University of Engineering (UNI) – Peru

PROFESSIONAL EXPERIENCE

PhD Researcher – CIFRE R&AE ADAS **July 2023 – July 2026**
Groupe Renault CTA / Heudiasyc UTC, Aubevoye / Compiègne
Development of a tactical decision-making system to guarantee the continuous operation of an ADAS system within the limits of the system's ODD. Design, implementation, and evaluation of the decisional architecture with ROS 2, Python, and C. Work carried out according to SIL (Software-in-the-loop) and VIL (Vehicle-in-the-loop) cycles, with direct experimentation on a real vehicle, demonstrating the operational integration of the system.

Teaching Assistant – Control Systems **Oct. 2023 – Feb. 2024**
Université de Technologie de Compiègne (UTC), Compiègne
Laboratory supervision for practical work in control systems, with student supervision and use of MATLAB/Simulink for the analysis and implementation of experimental exercises.

R&AE Intern – Final Year Project **Feb. 2022 - Aug. 2022**
Groupe Renault CTA, Aubevoye
Development of an adaptive HMI of an interactive tool to study the decision-making process involved during maneuver-based driving, performed by a user on an autonomous vehicle. System developed on a ROS architecture and evaluated in a simulated environment.

R&D Intern - Assistant Engineer **Sept. 2020 - Feb. 2021**
NW Technology, Nîmes
Design of a shell in a flexible polymer to ensure the sealing and robustness of aerodynamic pressure sensors, using 3D printing technology. Development of an HMI coded in Python oriented towards GCODE post-processing.

Fablab Monitor **Oct. 2019 - Jan. 2020**
UTC Innovation Center, Compiègne
Support for students (engineers, master's, PhD) as part of their training on prototyping issues. Assistance in the use of machines (3D printers, laser cutting, digital lathe) and modification of models in CAD software.

R&D Intern - DUT Final Internship **Apr. 2019 - June 2019**
I21 Innovation, Cagnes-sur-Mer
Energy management and energy harvesting of a connected object in order to make it as energy-efficient as possible. Research and proposal of technological solutions, optimization of information transmission and processing (programming of Atmega328p and STM32 µCs in C#).

PUBLICATIONS & RESEARCH

- R. P. Cardenas, L. Adouane, C. Zinoune and M. A. Benloucif, “Context-aware and Reliable Long-term Decision-Making for Safe Intelligent Vehicles: A survey,” in IEEE Transactions on Intelligent Vehicles, doi: 10.1109/TIV.2024.3524881.
- R. P. Cardenas Curo, L. Adouane, C. Zinoune and M. A. Benloucif, “ODD-based long-term decision-making for intelligent vehicles,” Proc. IEEE Intell. Vehicles Symp. (IV), Cluj-Napoca, Romania, 22–25 June 2025.
- R. P. Cardenas Curo, L. Adouane, C. Zinoune and M. A. Benloucif, “Assessing the decisional capability for an ODD-compliant automatic lane change system via Sense–Think–Act paradigm,” Proc. 12th IFAC Symp. Intell. Autonomous Vehicles (IAV), Phoenix, AZ, USA, 7–9 May 2025.

COURSES AND CERTIFICATIONS

Machine Learning Specialization **Sept. 2023 – Dec. 2023**

DeepLearning.AI & Stanford University, Online Course

Supervised learning (multiple linear regression, logistic regression, neural networks, and decision trees), and unsupervised learning (clustering, dimensionality reduction, recommender systems).

Self-Driving Car Engineer Nanodegree **July 2025 – Present**

Udacity / Waymo / NVIDIA, Online Course

Acquisition of skills in perception, sensor fusion, path planning, and control for autonomous vehicles. Utilization of Machine Learning/Deep Learning techniques, sensor integration, localization, trajectory planning, and vehicle control commands.

Deep Reiforcement Learning Nanodegree **Sept. 2025 – Present**

Udacity, Online Course

Learning deep reinforcement learning methods: value-based learning, policy-based methods, multi-agent learning, and implementation of intelligent agents capable of learning optimal policies.

ACADEMIC PROJECTS

UTAC Challenge 2024 **Feb. 2024 - May 2024**

Université de Technologie de Compiègne, Compiègne

Mentored the UTC student team during the UTAC Challenge 2024, the first European competition in a real-world environment dedicated to autonomous and connected mobility. Supervised the development of the "UTonome On Demand" (UTOD) system using CARLA and MATLAB for simulation. Results: 2nd place (Open Category) and Best School Award.

National IUT Robotics Competition **Oct. 2018 - Apr. 2019**

IUT Nice Côte d'Azur, Nice

Fabrication d'un robot autonome capable de simuler un match de tennis. Mission : conception et fabrication du châssis sous SolidWorks (impr. 3D), programmation et conception de cartes électroniques.

BIography :

Rhandy Cardenas received his Mechanical Engineering degree with a specialization in Mechatronics from the Université de Technologie de Compiègne (UTC), France, in 2023. He is currently pursuing a Ph.D. at the Heudiasyc Laboratory under the supervision of Dr. Lounis Adouane, in collaboration with the Advanced Driver Assistance Systems (ADAS) Department at Renault. His research focuses on decision-making for autonomous driving technologies, with particular interest in situation understanding, safety and risk assessment, and automotive control in Intelligent Transportation Systems (ITS).