. AYOUB CHEQRI .

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PROFESSIONAL PROFILE

Research engineer with a master's degree in **electronics and applied physics** & professional experience in **data-driven control** and **machine learning** for **dynamical systems**.

CAREER SUMMARY

R&D Engineer, CLAAS
Woippy, France *01/2024 - Present Day*

- Sensors data **retrieval**, **cleaning**, **processing** & **performance reporting.**
- Design and improve **decision-tree**-based **machine learning** models in **Python**.
- Conversion of **Python** generated ML models into **C** language, integration on **XC166** processor and development of **embedded** software for **real-time edge inference** and **classification**.
- Design and development of R&D **database** on **Databricks/Azure.**

Research Engineer/Data Scientist, CEA
Metz, France *12/2021 - 12/2023*

R&D for the **automation of agricultural machinery** with the industrial market leader **CLAAS**.

- Machine sensor data acquisition, cleaning and analysis in **Tableau** and **Python.**
- Development and evaluation of **machine learning ensemble models** for **weight inference.**.
- Deployment of **ML** models on **Nvidia Xavier NX, integration** via **CAN bus** within the **embedded system** on the balers and **automatisation** of **real-time** inference and classification tasks.
- Contributing to upgrading **C++** machine software and **performance benchmarking** on multiple targets**.**
- **Filtering** and **de-noising** of strain gauges signals for **dynamic bale weight forecasting.**

R&D Engineer Intern, Astek Group
Paris, France *03/2020 - 09/2020*

- Analysis of the state-of-the-art methods for trajectory tracking and formation flight of **autonomous UAVs**.
- Modeling UAVs in a **3D** environment using **Blender**.
- Developing a **detection & tracking** software in **Octave/Matlab** in the simple case of **leader-follower** drones.
- Evaluation and measurement of the **performances** of both detection and tracking tasks.

Research Assistant (Intern), Instituto Superior Técnico
Lisbon, Portugal *03/2019 - 07/2019*

- Developing software in **Matlab** to detect surfaces in a **3D point cloud**, captured by a **Microsoft Kinect** camera using **classical ML algorithms,** and track individual movements in an environment in **real time**.
- Collaborating with clients to deploy the product for an art exhibition at the MAAT museum using **ROS**.
- Working alongside the feeding robot team to design a GUI in **Python, ROS,** and **Qt** to **control** the robot's actions.

CORE SKILLS

Fields: Machine Learning | Embedded systems | Computer Vision | Signal Processing | Software engineering.
Programming Languages & Technologies : Python | Matlab | ROS | C/C++ | UNIX | Shell | Assembly | VHDL | Excel | Git.
Soft skills: Intellectual Curiosity | Problem-Solving | Critical Thinking | Adaptability | Team Work.
Languages: English | French | Arabic.

EDUCATION

Master of Science in Electronics & Applied Physics (MSc), *2017 - 2020*
National Graduate School of Engineering & Research Center (*Caen, France*)
Major: **Embedded Systems: Signal Processing, Control & Telecommunications**

Preparatory Classes for the "Grandes Ecoles", *2014 - 2016*
CPGE Reda Slaoui (*Agadir, Morocco*)
A two year undergraduate course preparing the highly competitive nationwide entrance examinations to the French engineering schools, specializing in **Mathematics** and **Physics**. (**The equivalent of a BSc in Mathematics).**

INTERESTS & DISTINCTIONS

Finalist of EM Normandy Business School Public Speaking Contest *2019*
Traveling, Literature, Music, Sports