Bamba TOURE
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Mechatronics Engineer – Industrial Systems & Control

Mechatronics engineer specialized in automation and control, with hands-on experience in industrial environments. I have worked on thermal regulation and instrumentation projects, from functional analysis to on-site commissioning and validation. I am now looking to apply my skills to practical projects in industry, energy and rail, leveraging rigor, adaptability, and the ability to coordinate technical topics with field teams.

Education

INSA Hauts-de-France — *2022–2025*

Engineering Degree (M.Sc. equivalent) in Mechatronics, Electronics and Automation

- **Mechanical Engineering**: CAD, Mechanism design, System mechanics, Thermodynamics, Heat transfer, Fluid mechanics, Elasticity, Strength of materials
- **Control Engineering**: Sampled-data control, Continuous/discrete control, Signal processing, Continuous and linear systems, Logic design
- **Electronics**: Microcontrollers, Digital electronics, Instrumentation, Electrical engineering, Power electronics
- **Mechatronics**: Reliability, System modeling, Servomechanism design, Multiphysics approach
- **Math & Computing**: Applied analysis, Numerical analysis

Lycée Parc des Loges, Évry, France — *2020–2022*

French preparatory classes for engineering schools (Physics & Engineering Science)

Work Experience

DCM ATN — *March – September 2024 / Nanterre*

Automation Engineering Intern – Thermal Regulation Project Lead

Environment: **Matlab/Simulink, PID, MPC, thermal instrumentation, industrial drying lines**

- Analyzed the thermal behavior of dryers and identified **disturbances** and improvement levers.
- Built a complete **thermal model** and performed advanced simulation in Matlab/Simulink.
- Designed, tuned and validated **PID and MPC controllers** to stabilize the process.
- On-site commissioning with technicians (tests, adjustments, validation).
- **Technical reporting**: simulation results, test protocols and CIR documentation.

Fives FCB — *Sept. 2022 – February 2023 / Lille*

Instrumentation Engineering Intern – Machine Instrumentation Project Lead

Environment: **industrial sensors, Python, rotary kiln instrumentation, industrial architecture**

- Defined **instrumentation** needs for monitoring rotary kilns.
- Installed and configured sensors: **inductive, ultrasonic, inclinometers**, dynamic measurement.
- Integrated data into an **industrial platform**, processing and extraction using Python.
- Performed on-site tests and **technical validation** of measurements and data acquisition.
- Produced documentation: **user manuals, test reports, technical recommendations**.
- Participated in project meetings with internal teams and customers.

Technical Projects

- **Remote ignition system (Arduino; Wi-Fi; ESP board)** – led the project end-to-end from design to prototype validation.
- **Quadruped robot (CAD + electronics integration)** – managed mechanical design and electronics integration planned prototyping steps and validated movements under real conditions.

Skills

Automation & Control	IEC 61131-3 (Ladder, FBD, ST) | PID/MPC | Discrete control | Matlab/Simulink | LabVIEW
Mechatronics & Modeling	Multiphysics modeling | Functional analysis | System reliability
Electronics & Embedded Systems	Arduino | Analog/Digital electronics | Instrumentation | Power electronics
CAD / Mechanical Design	Catia V5 | SolidWorks | Prototyping
Programming	Python | C/C++ | VHDL | VBA
Tools & Methods	DOORS | Agile methods | V-model
Languages	French (native) | English (fluent, TOEIC 880) | Spanish (beginner)

Certifications

- **TES Physical Fitness Certificate** – authorizes performing rail safety-critical tasks (non-driving) until 2030.
- **TES Psychological Fitness Certificate** – confirms psychological aptitude to perform rail safety-critical tasks.

Interests

Sports: Football, Basketball, Swimming, Skiing | **Other:** Travel, Reading