INTERSHIP - AI FOR FURNACE PILOTING

Aulnoye Aymeries

Internship

Context

A world leader in its markets, Vallourec provides benchmark tubular solutions for the energy sectors and other of the most demanding applications: from oil and gas wells in extreme conditions to the latest generation power plants, through bold architectural projects and high-performance mechanical equipment.

With our 15,000 employees, integrated production units, cutting-edge R&D and a presence in more than 20 countries, Vallourec offers its customers innovative global solutions adapted to the energy challenges of the 21st century in 3 main markets: Oil and Gas, Low Carbon Energy and Industry.

One R&D Aulnoye based in Aulnoye-Aymeries (North of France) is dedicated to metallurgy, non-destructive testing, corrosion resistance, surface treatments, heat treatments, simulations products and processes and mechanicals development.

Its experts work in close collaboration with Vallourec's group factories around the world to carry out research and technical support activities.

Missions:

For a better master of its manufacturing processes and to ensure its product quality and energy efficiency, Vallourec developed real-time simulation tools allowing assistance and/or piloting multiple steps of pipe manufacturing.

Over time, the features of these tools evolved to follow the changes in the functioning of Vallourec pipe plants. The main changes for production involve discontinuous production and smaller lots and require more flexible piloting tools to ensure product quality and energy efficiency.

The augmentation of the complexity of the furnace piloting and the increasing quantity of data available in the modern plant (from tracking data to non-destructive testing measurements) leads us to explore AI solutions for our piloting software and constitutes the topic of the internship.

The aim of the internship is to propose, develop, test and validate a new piloting model for our furnace.

The main steps will be:
- Literature review and selection of an adapted algorithm
- Development of the algorithm
- Validation in the R&D framework
- Validation in the industrial framework

Education

Engineer or Master

Merci d'envoyer vos cvs à l'adresse suivante :
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Technical skills:

- Machine learning methods
- Numerical methods for simulation
- Code development in C/C++, Python
- Physics of thermal exchanges

Transversal skills :

- Good level in french and english
- Scientific and technical curiosity
- Dynamism, listening capacity, proactivity
- Good interpersonal skills, scientific vulgarization