



ArcelorMittal



Where will you have your next challenging professional experience?

ArcelorMittal is the world's number one steel company, with **320,000 employees in more than 60 countries**. It has led the consolidation of the world steel industry and today ranks as the only truly global steelmaker with an industrial presence in 27 countries.

ArcelorMittal is the **leader in all major global markets**, including automotive, construction, household appliances and packaging.

We are visionary thinkers creating opportunities everyday. This entrepreneurial spirit brought us to the forefront of the steel industry.

Join ArcelorMittal Global R&D and envision the steel of tomorrow!!

ArcelorMittal Global R&D is spanning the Globe with 11 research centers (operating in process, products, application and steel solutions) within 8 countries and more than 20 nationalities. Because quality outcomes and innovation spirit depend on quality people, we seek to attract and nurture the best people to deliver superior and innovative solutions to our customers.

Would you want to integrate a multicultural company with challenging missions and passionate people, ArcelorMittal is for YOU!

We are looking for Interns, VIE, apprentices willing to work in a multicultural environment in different domains.

English will be a plus.

Location		Contact			
Research center:	RDMP	Last name:	Fricout	E-mail :	gabriel.fricout@arcelormittal.com
Cluster :	MC	First name:	Gabriel	Phone number:	+33 3 87 70 41 97
Department:	DSP	Job title:	Research Engineer		

Training offer	
Mission title: Defect detection in industrial images	
Start date: February 2014 (flexible start date)	Duration: 6 month
Worklocation:	
Areas	
Purchasing	Production / Process / Exploitation
Commercial / Marketing	Research & Development / Metallurgy Innovation
Finance / Audit	Recycling / Process and Product Development
Legal / Communication	Human resources / Health / Safety / Environment
Supply Chain / Logistic	Strategy & Business Development
Maintenance	Information System / Industrial Computer Science



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The purpose of the mission :

The successful candidate will be in charge of developing image processing tools to analyze images coming from a completely new industrial sensor. He will also be in charge of proposing and applying an evaluation protocol for estimating the performances of the system.

The final goal of the mission is to have a clear view on the system capabilities in order to organize its further installation in one or several plants.

The mission : accountabilities and activities

During previous studies, a completely new imaging device has been developed in our laboratories to detect specific periodic defects on our production line. Some developments have also been done in the field of image processing in order to enhance the contrast of periodic defects. The first sensor prototype is now installed in one production line in Spain and data collection has started.

The internship will be divided into three main tasks:

- Firstly, a software tool for visualizing the images and testing the first defect detection algorithms is required. The intern will be in charge of developing this application needed for conducting efficiently trials in the plant. This will involve software development and image processing algorithms integration.
- In a second step, many industrial images will be collected. It will be necessary to organize "batch" processing of these images with optimal defect detection performances.
- Finally the results of the previous analysis will be compared with visual inspection results provided by the operators on the line in order to quantify the system performances. A precise methodology for conducting the comparison between visual and automatic detection will have to be defined and followed.

The environment

The training will take place in ArcelorMittal R&D center in Maizieres-lès-Metz, within the measurement and control department and more precisely the data and signal processing team. The internship will require a strong interaction with the various partners of the project (mainly a Finish technology company and a steel plant in Spain) leading to a very international work environment.

The candidate will be supervised by research engineers specialist in image processing in a highly multi-disciplinary environment.

Trainee's profile

Studies level: Master 2, Bac+5

Discipline : Applied mathematics, computer sciences

School/University : Engineering school or computer science university

Required profile and competencies

The candidate will be required to have competencies in the field of image processing:

- Knowledge of classical image processing tools: convolution, mathematical morphology ...
- Good computer programming skills are required
- The knowledge of C/C++ and Python programming language will be a strong advantage for the work

In addition, the candidate will have to have good relational skills to integrate the work team which will involve also people from the production line and sensor development team. As the environment is highly multi-cultural a good knowledge of English will be very important.

To put back to appropriate trainee correspondent