



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 solutions for defect detection in industrial environment. In particular, this will involve:

- The critical evaluation of prototype and proposition of improvements
- The development and adjustment of object detection algorithms on images coming from production line.
- The evaluation of the proposed solution prior to an industrial deployment.

The mission : accountabilities and activities

During his mission, the successful candidate will have several activities.

First, he will have to develop a fair evaluation protocol for defect detection algorithms in industrial images, which means building reference data base based on existing industrial data, designing experiments for varying the various algorithms parameters in reasonable ranges, compare the results...

This protocol will be used first to make the evaluation of internally developed software prototype for defect detection.

Focusing on one particular industrial problem using images acquired on one of our production line, the candidate will then try to obtain the best possible detection results. This will involve the design of specific defect detection algorithms programmed in C/C++ and python.

The final stage of the training will be to prepare all elements (algorithms, implementation recommendations, performance evaluation...) for a deployment of the proposed solution on the production line.

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 candidate will be supervised by research engineers specialist in image processing in a highly multi-disciplinary environment involving also specialist in sensors developments and various field of physics (optics, metallurgy, thermodynamics, electro-magnetism...).

The measurement and control department has developed high competencies in image acquisition for surface quality control on production line, so the candidate will be in a great environment for testing and developing state of the art image processing algorithms.

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 ...
- Prior experience with a dedicated software (openCv, Aphélon, Matlab...) could be an advantage

and computer programming skills:

- C/C++ (software development, compiling/link process)
- Python knowledge could be an advantage

Both will be necessary to complete the training objectives.

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