



## FORTHEM Study Projects Offer from IUT Chalon sur Saone, France

### Who we are :

The courses of IUT (University Institute of Technology) Chalon sur Saône are:

- 4 University Diplomas in Technology (called "DUT"— two-year degree):
  - Legal Careers (CJ) ;
  - Industrial Engineering and Maintenance (GIM);
  - Logistics and Transport Management (GLT);
  - Materials Science and Engineering (SGM).
  
- 5 Professional Degrees (Vocational Bachelor's Degrees - level L3)
  - Agricultural Equipment with two streams :
    - . Technical and Economic Management of Agricultural Equipment (GTEA)
    - . Automation and Robotization in Livestock Farming (ARE) ;
  - Non Destructive Testing of Materials and Structures (CNDMS);
  - Logistics and Flow Management: Hospital Logistics (LH);
  - Logistics and Information System: Supply Chain (SC);
  - Sound and Image Technology with two streams :
    - . Image and Sound Techniques and Activities (TAIS)
    - . Real Time 3D Computer Graphics (I3DTR)

### Which projects we have to offer :

#### GIM ( Industrial Engineering and Maintenance)

- The first one around new emerging technologies. The department is looking to work with a team that could bring them complementarity in the development of virtual and/or augmented reality applications.

The needs in terms of field applications are known and identified: remote troubleshooting, virtual or augmented dismantling, cabling, ...

The IUT could prove to be a real field of experimentation and already possesses the following equipment: HTC Vive helmet and HoloLens 2. The establishment is also in contact with local companies who would like to invest in this field.

A first application of virtual dismantling exists and needs to be improved. The CAD models are available for real time, it is now necessary to develop the application with the appropriate interactions for learning. We are looking for student developers (C sharp language, Unity 3D) who would like to work together with us on this project.

By combining the skills from both universities, it will be possible to propose concrete solutions and to help GIM and computer science students advance in the technical knowledge that represents the very heart of their studies.

- The second one deals with sustainable development and the use of renewable energy. GIM is working on a tutored project aiming at the development by our students of an urban wind turbine. We are looking for students interested in the subject and more specifically motorization, mechanics and the electrical aspect.

This common project could be an opportunity for an exchange of good practices and feedback on these subjects but also for example on aerodynamics, with the final goal of improving the performance of this wind turbine.

### **GLT ( Logistics and Transport Management)**

For tutored projects GLT is looking for partners to work together on Sustainable Logistics. This could concern urban as well as industrial transport and one of the aspect could be "the last kilometre", multi-modal transport, canals, ...

The tutored project could last one or two years and take the form of a meeting with foreign students, conferences and joint round tables as well as company visits.

### **Vocational Bachelor's Degree in Agricultural Equipment**

Development of a driving simulator for tractors. The proposal is to manufacture a tractor driving simulator. The department is looking for computer developers to join our teams and to create a simulator together.

### **Vocational Bachelor's Degree in Non Destructive Testing**

"Robotic NDT " : Non-destructive testing has a very wide range of tools and methods for the control of materials and equipment, but they still use too many chemicals or polluting developers. There is a real need to develop methods that are safe for the environment.

Robotisation can provide an interesting answer in this field, but it also allows to automate tasks that are still too tedious. For example: eddy current, thermographic technique, parts laser tracking using robot head, etc ...

The field applications are known and available, the team is looking to create a project with other students able to work on the robotics part and thus jointly develop solutions for the NDT of tomorrow.

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