Optimisation Research Scientist
(Leuven or Lommel or Kortrijk)

By exploring and prototyping mathematical optimization techniques, you generate alternative designs for complex products (machines, vehicles, ...)

Companies are looking forward to take the next step towards an innovative design process.

As a researcher in multidisciplinary design optimization, you will have the opportunity to work on challenging optimization problems and apply various optimization techniques to generate solutions for machine designers. Typical design problems are constraint-based and multi-objective, requiring advanced non-linear mixed-integer solvers.

Focusing on knowledge based engineering tools for high-tech machine and vehicle design, you will:
- Work together in a small research team combining expertise in signal processing, computer vision, mechatronics, robotics, machine learning, artificial intelligence, modelling of cyber-physical systems;
- Define the adequate models to capture the essence of the problem in the early stages of the design, and identify the parameters linked to the machine or vehicle behavior;
- Solve (multi-objective) optimization problems using methods (including but not limited to) convex optimization, constraint programming, nonlinear programming, … Decision variables can be continuous and/or discrete;
- Program, implement, test and verify the performance of these methodologies with prototype tools developed in e.g. Cplex, MiniZinc, ASP, Matlab.

Profile

You have:
- A Phd in Engineering (Computer Science) or Mathematics (Applied Mathematics, Statistics) or other relevant domain;
- A track record in the field of optimization;
- Experience with constraint solvers, search algorithms and optimization toolboxes (Matlab, Cplex);
- A keen interest to apply theoretical concepts on practical case problems.

Any experience with applications on machines and/or vehicles, or affinity with modelling software (Simscape, Amesim, Matlab, Simulink) is a plus.

You are:
- Passionate about research and new technologies;
- A good conceptual thinker;
- Result oriented, responsible, self-directing and team player;
- A good communicator;
− Eager to learn.

Experienced engineers will also coach young researchers and lead projects.

**Offer**

− Flanders Make gives you the opportunity to develop yourself in the network of top industry and universities and research institutes;
− An open-minded, flexible and challenging working environment;
− A warm atmosphere and top colleagues;
− An attractive salary with fringe benefits.

Depending on your place of residence or preference, you can work on one of our sites (flexible workplace policy).

**Flanders Make**

*Flanders Make* is the strategic research centre for the manufacturing industry. From our sites in **Lommel**, **Leuven** and **Kortrijk**, we stimulate open innovation through excellent research.

Our purpose: realising a top-level research network in Flanders that delivers full support to the innovation projects of manufacturing companies. This way, we want to contribute to new products and production processes that help to realise the vehicles, machines and factories of the future.

Because of our unique position between industry and research, our teams combine application and system proficiency with technological and scientific knowledge.

We focus on 4 key competences, all based on **modelling and virtualisation**:

1. Decision & Control
2. Design and optimisation
3. Motion product specification, architecture, and validation
4. Flexible assembly specification, architecture, and validation

**How to apply :**

To apply, go to [http://jobs.flandersmake.be](http://jobs.flandersmake.be).

Please fill in the online application form and upload a motivation letter and cv.