



### **PhD topic #3: Machine learning for data-driven optimization under uncertainty**

Optimization applications abound in many areas of engineering and management. Some parameters involved in optimization problems are subject to uncertainty, including transit times and fuel prices in transportation and distribution planning, product demand and processing times in production scheduling, and load and capacity in power generation planning, to cite a few examples. In the era of big data, a wide range of machine learning techniques can be used to analyse data and extract information to facilitate knowledge discovery and decision-making. The aim of this project is to investigate robust data-driven optimization approaches, where uncertainty is modelled using machine learning techniques. Models and algorithms will be developed and tested for specific application problems related to transportation systems, energy systems, or supply chain management.

- The doctoral candidate will be registered at both UIR and Ghent University (Belgium). He will be supervised by Dr Mounir Ghogho and Dr Tarik Aouam.
- Applicants must have a Master (or equivalent) in data science, operational research, computer science, applied mathematics or equivalent field.
- Good skills in machine learning, optimisation, modelling, and a good command of English are required. Prior research experience is viewed positively but is not necessary.
- Applications should be emailed to [ticlab-admin@uir.ac.ma](mailto:ticladmin@uir.ac.ma) and [doctorat@uir.ac.ma](mailto:doctorat@uir.ac.ma)