Stage de master – MSc internship
Data analytics for planning agile ramp-up

Overview of the topic:

Frequent development of products and services became a key feature of nowadays businesses aiming to keep up with increasing customer requirements and to meet social challenges. This put more pressure on systems engineering and management to align with quality and sustainability requirements. Ramp-up projects, allowing for the transition from prototype realization to series production, comes into play at this point (Heraud et al., 2023).

Recent crises as well as technological development unveiled the need for agile production ramp-ups. Usually ramp-up success depends not only on internal resources within an organisation but also one its partners and suppliers capabilities (Li et al., 2014; Dreher and Oesterle, 2022). Considering a network of stakeholders in a given territory, ensuring agile ramp-up requires first a good understanding of the existing capabilities among these stakeholders, second a roadmap for quickly ramping up production of goods and services.

This internship aims to developed a data-backed approach for supporting agile ramp-up. More specifically, it will involve an analysis of a database of companies in the one French region in order to first understand existing portfolio as well as value network structures. Second, using machine learning algorithms, it is expected to provide some recommendations on value network configurations for quick ramp-up considering several performance criteria. A focus will be put on automotive sector.

Desired candidate skills: Data science, programming in R or in Python, computer science (any background in relation to industrial management is appreciated, but not obligatory).

Location: Mines Saint-Etienne.
Laboratory: LIMOS (UMR 6158) – Laboratory of Computing, Modelling and Optimization of the Systems.
Supervisors: Mihaela Juganaru, Khaled Medini
Period: 6 months starting from February 2024.
Salary: Internship scholarship.
Application:
- The application should include the following: short résumé, cover letter, transcripts of the past two years (including partial results of the current semester, if any).
- Application and any request should be emailed to: Khaled.medini@emse.fr

References: