**PhD Student in Industrial Engineering**

<table>
<thead>
<tr>
<th>Ad job reference</th>
<th>2023-PHDGI-GSCOP</th>
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<tr>
<td>Research field</td>
<td>Industrial Engineering-Urban Factories-Co-Design</td>
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<td>Host laboratory</td>
<td>G-SCOP (UMR 5272 Grenoble-INP, UGA and CNRS) / Website: <a href="http://www.g-scop.fr">www.g-scop.fr</a></td>
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<td>Requested profile</td>
<td>PhD Student</td>
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<tr>
<td>Location</td>
<td>Grenoble, France</td>
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<td>Date of recruitment / contract term</td>
<td>02/01/2024 (36 months)</td>
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<td>Contacts</td>
<td>Jean-François Boujut: <a href="mailto:jean-francois.boujut@grenoble-inp.fr">jean-francois.boujut@grenoble-inp.fr</a></td>
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Grenoble INP - UGA is a renowned public institution of higher education and research, and a major player in the Grenoble ecosystem. It is the engineering and management institute of Grenoble Alpes University, and plays a leading role in the scientific and industrial community. Grenoble INP is a leading public institution accredited with the French label “Initiative d’excellence”. It offers innovative engineering and management programs, with an increasing internationalization of its course offers. The courses are grounded in sound scientific knowledge and linked to digital, industrial, organizational, environmental and energy transitions. The Engineering and Management Institute of Grenoble Alpes brings together more than 1300 staff members (teacher-researchers, lecturers, administrative and technical staff) and 8300 students, located on 8 sites (Grenoble INP - Ense3, Grenoble INP - Ensimag, Grenoble INP - Esisar, Grenoble INP - Génie industriel GI, Grenoble INP - Pagora, Grenoble INP - Phelma, Polytech Grenoble, Grenoble IAE and the INP Prepa). Grenoble INP is also a highly-ranked institution of higher education and research, leading the way in the fields of engineering and management on an international scale. It is a member of a large number of international academic and research networks. It is part of the European University UNITE!. As part of Grenoble Alpes University, Grenoble INP has associated guardianship of 39 national and international research laboratories and of technological platforms. The research conducted there benefits both its socio-economic partners and its students. Grenoble INP is at the heart of the following scientific fields: physics, energy, mechanics and materials; digital; micronanoelectronics, embedded systems; industry of the future, production systems, environment; management and business sciences.

Grenoble INP - UGA is an equal opportunity employer committed to sustainability. Grenoble INP-UGA celebrates diversity and equity and is committed to creating an inclusive environment for all employees. All qualified applications will be considered without discrimination of any kind.
Research

G-SCOP is a multidisciplinary laboratory which has been created to meet the scientific challenges imposed by the ongoing changes within the industrial world. The scope of the laboratory goes from the products conception to the production systems management and is based on strong skills in optimization.

Job description:

The transformation of our modern societies, in response to huge stresses due to climate change, political and economic uncertainties is creating an important and urgent need for change. The European Green Deal is the political response of the EU to this challenge. It aims at putting the EU in the right tracks towards a carbon neutral society. The Thesis project is part of a Green Deal European project that tackles the problem of local, sustainable and urban manufacturing. Is it possible to invent a new production model that could solve the contradiction of being integrated into the urban environment and still producing quality products with little impact on the planet? We suggest to rely on existing new forms of collaboration and value creation that already exist. Digital communities gathered around open-source projects, Makers that create collective of professionals, artists, craftsmen, designers, to co-create solutions, SMEs and entrepreneurs that are creating more sustainable, circular business models, are important resources that could participate to create the model we are looking for.

The LAUDS-Factory is an innovative concept aiming at creating small, versatile factories in local and urban areas to co-create and produce customized products in small series. In addition, these local infrastructures should participate to create a more user-centric model where the user is active in the produce-use-repair-recycle loop. These LAUDS factories aim at promoting the new European Bauhaus approach by bringing the production close to the user and integrate the production into the social environment.

The thesis project aims at developing a maturity model enabling collaboration among the various actors involved in a LAUDS co-creation project.

The challenge is to create an evaluation framework that would allow to support and develop the collaborative capacity of the project members.

The main purpose is thus to support and develop the collaborative capacity of the various involved actors in a distributed and decentralized environment. The aim is to develop a local readiness level scale in order to allow a self-evaluation of the actors while engaging in the process of building a LAUDS factory. It will also include a personal analysis of the LAUDS factories potential stakeholders (SMEs, start-ups, artists, makers and citizens, local authorities...), and a classification and clarification of their needs and expectations, through interviews and surveys. This is particularly necessary in order to take into account the diversity of the regional territories and different scales. The outcome of this thesis will be a capacity building model that consider all the dimensions of the collaboration (i.e. actors, shared knowledge and documentation, quality criteria, openness and business models, networking, political and territory, etc.), including a stakeholder map to clearly understand the context conditions and the value elements to be delivered to each stakeholder.

The research methodology will be iterative and empirical, strongly connected to the case studies of the project.

- The first stage will consist in a large review of existing maturity models and approaches in the literature, understanding the new urban manufacturing approaches and the articulation between design and manufacturing. This should lead to the proposition of a maturity scale and method associated to evaluate and support the projects to scale up in terms of production and quality standards.

- The second stage of the thesis will be empirical. Through the participation to several projects funded by the LAUDS factories project, we will have the opportunity to test the implementation of our method and to refine it. This will be a co-development phase very user-centric. Through case studies, we will gather data and evidences that will allow a strict and robust evaluation of our proposition and in the same time create a methodology to implement it concretely.

- The third stage of the project will be the consolidation and publication of the final version of the model and the implementation method. The conceptual elaboration of the model should also be associated with a method and an information medium to disseminate the results within the company and enable their reuse by anyone wishing to develop an urban manufacturing approach.
Required skills:
- communication and presentation skills
- interview and data structuring
- data analysis

Profile:
Ideally a PhD student with an engineering background and an experience in empirical work such as semi directed interviews, ethnography.

Specific requirements or conditions

Several travels will be necessary around Europe as part of the LAUDS Factories European Project.
Proficiency in English is required, good French is advised.

Specifics of the position
The research will be located at the G-SCOP lab.

Position assigned to a restricted area: NO
(Device for the protection of the scientific and technical potential of the nation, conditioning the appointment of the researcher to the authorization of the Defense Security Officer).

How to apply

Applications must be sent to: jean-francois.boujut@grenoble-inp.fr
Application deadline: 02/11/2023