



PHD Position on Smart Microservice Scaling



Anchored in its territory, multidisciplinary and open to the international, Université Grenoble Alpes brings together the main public higher education institutions of the area.

59 000 students

7 800 employees

109 research labs



www.univ-grenoble-alpes.fr

Full-time contract

Duration:

3 years starting from 01/01/2023

Place:

**LIG, Grenoble
France**

Salary: 2 173,50 €

The LIG

The mission of LIG is to contribute to the development of fundamental aspects of Computer Science (models, languages, methodologies, algorithms) and address conceptual, technological, and societal challenges.

Increasing diversity and dynamism of data, services, interaction devices, and use cases influence the evolution of software and systems so they need to guarantee the essential properties such as reliability, performance, autonomy, and adaptability. Addressing such challenges is the objective of 22 research teams organized into 5 focus areas.

This offer concerns the **Distributed Systems, Parallel Computing and Networks** area.

Your Mission

You will work with Vania MARANGOZA as PHD supervisor in the ERODS team (erods.imag.fr).

The goal of the ERODS team is to study the construction and the management of cloud systems. The main scientific goals for the ERODS team are self-management, distributed runtime support and virtualization.

You will conduct research on the smart scaling of microservice-based architectures.

Contact

Send CV, motivation letter and references to Vania MARANGOZOVA at

vania.marangozova@imag.fr

Your Activities

- Investigate and propose smart microservice elasticity strategies. The goal is to smartly scale a group of microservices to push further state-of-art solutions which consider single microservice scaling only. The research work will tackle the questions of identifying and jointly managing groups of microservices.
- Identify pertinent metrics for microservice performance monitoring and define rules for consistent reconfiguration during scaling. The proposed mechanisms are to be integrated in Kubernetes and evaluated in the context of the cloud and 5G context brought to you by the industrial partner Orange.
- Collaborate, communicate and publish research results.

Your Profile

- Master's degree in computer science
- Knowledge in machine learning
- Knowledge in distributed systems
- Curious, motivated
- Practice and develop your analytical reasoning and communication skills
- Rigorous

Important details concerning the position

From 01/01/2023, LIG will be a ZRR zone which requires a special habilitation to work within. The request and delivery of this habilitation may take up to two months.

Why Work at UGA?



Social Action

- Financial Advantages
- University Activities Committee



Work vs. Personal Life

- 5 week annual leave
- Diversity, Special Needs, Quality at Work



Coaching

- Mobility
- Training, Career Planning



Campus

- Sports
- Culture and Art
- Exceptionnal Location
- Accessibility

Postulate

CV, motivation letter and references

Mail to
vania.marangozova
@imag.fr

HR:
Sophie BARDIN

Interview