Offer #2024-08445

Internship M2 - Advanced Dynamic Simulation Methods for Multi-Physical Meta-Structures

Contract type : Internship agreement

Level of qualifications required : Graduate degree or equivalent

Fonction : Internship Research

About the research centre or Inria department

The Inria Centre at Rennes University is one of Inria's eight centres and has more than thirty research teams. The Inria Centre is a major and recognized player in the field of digital sciences. It is at the heart of a rich R&D and innovation ecosystem: highly innovative PMEs, large industrial groups, competitiveness clusters, research and higher education players, laboratories of excellence, technological research institute, etc.

Context

The position will be hosted by the I4S team, a joint research team between Inria and Université Gustave Eiffel. The I4S team has offices at:
- Rennes, on the Beaulieu Scientific Campus (Av. Général Leclerc, 35042 Rennes)
- Nantes, on the Université Gustave Eiffel Campus (All. des Ponts et Chaussées, 44340 Bouguenais)

Assignment

Innovative architected - smart or functional - structures (i.e. meta-structures) are the locus of various vibrational or acoustic phenomena which require in-depth understanding, predicting and harnessing in civil and aerospace engineering. Their multi-physical nature raises theoretical, computational and phenomenological challenges which are currently the subject of frontier research. The recruited intern will be part of an Inria Exploratory Action, aiming to leverage state-of-the-art modelling strategies developed within the group, to unveil multi-physical meta-structures for dynamic control. The candidate will delve into wave physics, structural dynamics, finite elements and computational fluid dynamics.

Main activities

Two research tracks are proposed depending on the candidate's background and affinities.
Track 1: Computational wave mechanics
Track 2: Computational fluid dynamics
Details for both MSc tracks are available at:https://team.inria.fr/i4s/job-offers/

To succeed, the candidate must have:
- Outstanding problem-solving ability,
- Good track record (incl. English proficiency), showing background in subjects such as mechanics, physics or mathematics and a good computer/scientific programming literacy (e.g. Python, Matlab or Julia),
- A conscientious, self-motivated mindset and desire to pursue a scientific career.

Application procedure:

Field: "CV" — Upload a detailed curriculum vitae.

Field: "Recommendation" — Recommendation letters are not required. Instead, please upload your most recent academic transcripts (or M1 transcripts, if applicable).

Field: "Motivation" — To help us get to know you better, we ask you to upload a very short text file (.txt or .pdf):
- Indicating your preference between "Track 1" and "Track 2" and your preferred hosting location: "Rennes" or "Nantes",
- Telling, in 100 words or less, how you would like to embody the core values of a scientist.

Benefits package

- Subsidized meals
- Social, cultural and sports events and activities

General Information

- **Theme/Domain** : Optimization and control of dynamic systems
  Scientific computing (BAP E)
- **Town/city** : Rennes
- **Inria Center** : [Centre Inria de l'Université de Rennes](#)
- **Starting date** : 2024-02-01
- **Duration of contract** : 6 months
- **Deadline to apply** : 2025-02-28

Contacts

- **Inria Team** : [I4S](#)
- **Recruiter** :
  Droz Christophe / christophe.droz@inria.fr

About Inria

Inria is the French national research institute dedicated to digital science and technology. It employs 2,600 people. Its 200 agile project teams, generally run jointly with academic partners, include more than 3,500 scientists and engineers working to meet the challenges of digital technology, often at the interface with other disciplines. The Institute also employs numerous talents in over forty different professions. 900 research support staff contribute to the preparation and development of scientific and entrepreneurial projects that have a worldwide impact.

> **Warning** : you must enter your e-mail address in order to save your application to Inria. Applications must be submitted online on the Inria website. Processing of applications sent from other channels is not guaranteed.

Instruction to apply

Defence Security :
This position is likely to be situated in a restricted area (ZRR), as defined in Decree No. 2011-1425 relating to the protection of national scientific and technical potential (PPST).Authorisation to enter an area is granted by the director of the unit, following a favourable Ministerial decision, as defined in the decree of 3 July 2012 relating to the PPST. An unfavourable Ministerial decision in respect of a position situated in a ZRR would result in the cancellation of the appointment.

Recruitment Policy :
As part of its diversity policy, all Inria positions are accessible to people with disabilities.