2018-00283 - R&D Engineer WILLOW

**Contract type** : Public service fixed-term contract  
**Renewable contract** : Oui  
**Level of qualifications required** : Graduate degree or equivalent  
**Fonction** : Temporary scientific engineer  
**Level of experience** : Recently graduated

## About Inria

Inria, the French National Institute for computer science and applied mathematics, promotes “scientific excellence for technology transfer and society”. Graduates from the world’s top universities, Inria’s 2,700 employees rise to the challenges of digital sciences. With its open, agile model, Inria is able to explore original approaches with its partners in industry and academia and provide an efficient response to the multidisciplinary and application challenges of the digital transformation. Inria is the source of many innovations that add value and create jobs.

## Context

Established in 1967, Inria is the only public research body fully dedicated to computational science. Combining computer sciences with mathematics, Inria’s 3,500 researchers strive to invent the digital technologies of the future. Educated at leading international universities, they creatively integrate basic research with applied research and dedicate themselves to solving real problems, collaborating with the main players in public and private research in France and abroad and transferring results innovative companies. Inria researchers have published over 4,500 articles in 2013 and are behind over 270 active patents and 110 start-up companies. In 2013, Inria’s budget was 235 million euros, 25% of which represented its own resources. The 180 project teams are distributed in eight research centers located throughout France.

The brand new Inria-Paris research center is located in the heart of Paris. Thanks to its top-quality researchers and numerous international guests, the Inria-Paris research center plays a leading role in international research, with a strong focus on networking and communication systems. The 41 research teams of the center are continuously pushing the boundaries in developing new concepts and techniques.

The successful candidate will be hosted within the research team Willow (http://www.di.ens.fr/willow/). Willow is a leading research team in computer vision, focusing on the representational aspects of visual object recognition and dynamic scene understanding. The research objective of the team is to develop geometric, physical, and statistical models for all components of the image interpretation process, including illumination, materials, objects, scenes, and human activities.

## Assignment

The goal of the project is to construct new models and learning techniques to develop and learn new powerful representations for image and video understanding. Such representation should support and advance the tasks of visual object and action recognition. Specifically, the project will focus on recognizing objects and action in the object manipulation setup. Initially the manipulation will be performed and learned in the physical simulations settings and pre-recorded real videos of object manipulation by people. Later, depending on the availability of hardware, the representations should be transferred to real robot setup. The project will build on and will advance existing techniques of reinforcement learning, imitation learning and convolutional neural networks. The project may involve collaboration with PhD students and interns at the WILLOW team and should lead to a scientific publication.

## Main activities

Construct models and learn representations for understanding visual data

## Skills

- Construct models and learn representations for understanding visual data
- Main activities at the WILLOW team and should lead to a scientific publication.
The candidate should possess good mathematical background and programming skills.

**Benefits package**
- Subsidised catering service
- Partially-reimbursed public transport

**Remuneration**
- Duration: 12 months
- Targeted hiring date: 01/03/2018
- Location: Paris 12ème
- Gross Salary per month: according to experience