

Campagne 2012  
de  
recrutement d'ingénieurs jeunes diplômés

– English version –

# Bordeaux

No job offer for the moment.

# Grenoble

Amiqua4Home – Ambient Intelligence, Smart Habitats, Middleware, Systems Integration, Human Computer Interaction

Hemera - Large-scale platform, Grid'5000, experiments, methodology

Kawah - Parallélisme, multicœurs, monitoring, analyse de performance

KissPlice - Bioinformatics, Algorithms, Graphs, Software, Genomics, NGS, parallelism, C++

Mobilitics - Privacy, smartphone, iPhone/iOS, Android

MultiPop - Computer Science /Biology Interface, Image Analysis, Software Engineering

VoCore - Scene Graph; Augmented and virtual reality; Advance programming

# Lille

AntAndroid - Cloud computing, Android, data collection

BioSciences – Bioinformatic, Java, Perl, software, portail, Ontology

MPA Gemonics – statistics, genomics, classification

Mate – Pharo, VM, language, Smalltalk

Miaou – RFID, standards, Java

## Nancy

DKD - Knowledge discovery, Big data, Distributed computing

FASST - audio, automatic speech recognition, signal processing, C/C++, Java

Objectif 1024 - Integer factorization, parallel and distributed computing, number field sieve

## Rennes

Padrone – optimization, performance, portability, dynamic rewriting, architecture, microarchitecture.

MedInria – Medical imaging, Qt, image processing, visualization

OpenVibe – Brain-Computer Interfaces; C++, Open-Source, Software Architecture, OpenViBE

Plasma – distributed algorithms, smart phones, website, graphical interface, test cases

CIDRE - Security, Intrusion Detection, Information Flow, Monitoring

## Rocquencourt

ALPAGE – Wiki, CMS, grammar, natural language processing

ARLES – Mobile Social Networks, Android, Java, Middleware

MUSYNC – Computer Music, Realtime

POMDAPI – Optimization, C++

SISYPHE – Platform, simulation, GUI, web-services, interoperability, 3-tier architecture, SGBD

## Saclay

No job offer for the moment.

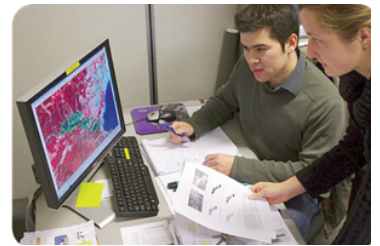
## Sophia

ABS2 - Van der Waals models, Voronoi diagrams, C++, generic programming

# Bordeaux

No job offer for the moment.

Grenoble



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**Would you participate on our research projects or on development activities in advanced technologies? Then, join us!**

## Research team

### PRIMA

The objective of the PRIMA research team is to develop the scientific and technological foundations for human environments (habitats) that are capable of perception, action and interaction. The goal is provide new forms of context aware services to improve quality of life.

Scientist contact  
James.Crowley@inria.fr

Human ressources contact  
Aurelia.Mouton@inria.fr

## Assignment

INRIA has received an investment grant to create an experimental facility for innovation and evaluation of ambient intelligent technologies. The role of this senior R&D engineer will be to participate in the design implementation, maintenance and operation of the facility. Responsibilities will include:

- 1) Participating in the selection of sensors, actuators, interface devices, communications equipment and software for a smart habitats research facility.
- 2) Participation in selection and installation of equipment for a "creativity lab", a personal robotics lab, and an experimental control room.
- 3) Assist with maintenance and use of the facility for experiments.

**Keywords:** Ambient Intelligence, Smart Habitats, Middleware, Systems Integration, Human Computer Interaction

## Qualification & experiences

Ingénieur Confirmé : To be at least an engineering graduate or having equivalent qualification and to have from 2 to 7 years' software development experience)

## Skills & qualities

- Project Management
- Software development tools and methods
- Competence in programming with C, C++, Java and other languages
- Competences in electronics
- Technical and scientific English.

Duration: 12 months (renewable once)

Location: Montbonnot, France

Targeted hiring date: 15/10/2012

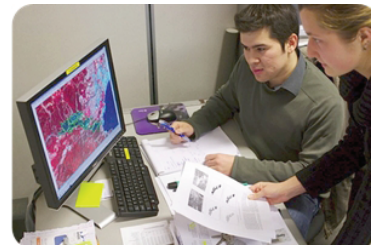
Salary: 2527 à 3054 € gross based on experience

This offer is available from 16/04/2012 to 31/12/2012

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## Research team

AVALON

Scientist contact  
Christian.Perez@inria.fr

Human ressources contact  
Aurelia.mouton@inria.fr

## Assignment

The main goal of the engineer is to participate to the definition and realization of reproducible and large scale experiments on the experimental Grid'5000 platform (<https://www.grid5000.fr>). Grid'5000 is made of 11 sites gathering more than 8000 cores on more than 1500 nodes. This mission has to be lead in collaboration with research teams member of the INRIA large-scale initiative Héméra (<https://www.grid5000.fr/Hemera>). The engineer will also work with the Grid'5000 development team to simplify the realization of reproducible large-scale experiments. The engineer will participate to the research activities aiming at defining a methodology of experimentation on Grid'5000.

**Keywords:** Large-scale platform, Grid'5000, experiments, methodology

## Qualification & experiences

Ingénieur Confirmé : To be at least an engineering graduate or having equivalent qualification and to have from 2 to 7 years' software development experience

## Skills & qualities

- Strong knowledge of Linux (administration & user)
- Good knowledge of distributed systems
- Abilities to work as a team
- Abilities to work independently
- Knowledge of parallel and distributed environments if possible

Duration: 2 years

Location: ENS Lyon

Targeted hiring date: 01/10/2012

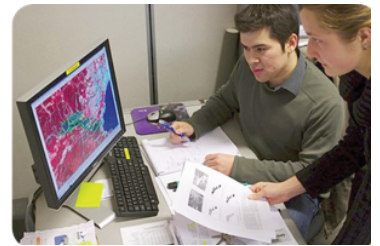
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## Research team

Bamboo is a multidisciplinary (biology & computer science) and very international (brazil, italy, portugal) team, expert in designing models and algorithms in genomics and post-genomics. The group is especially interested in proposing methods for the analysis of next-generation sequencing data and applying these methods together with its biologist collaborators on various topics related to health & environment.

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## Assignment

KisSplice is a local transcriptome assembler which enables to study polymorphism very precisely. The recruited engineer will 1- organise the software components, propose a portable packaging, guarantee the performances of the code and the ergonomoy of the software, 2- conceive and implement new algorithms in collaboration with researchers from the team (participation in publications) to answer new needs raised by biologists and 3- propose a parallélisation scheme and implement it using the latest technologies (MPI and/or openMP)

**Keywords:** Bioinformatics, Algorithms, Graphs, Software, Genomics, NGS, parallelism, C++

## Qualification & experiences

Ingénieur Jeune Diplômé : To be an engineering graduate or having equivalent qualification - To have obtained diploma in 2011 or 2012

## Skills & qualities

Skills in algorithms and mathematics/computer science (graph theory is appreciated)

Interest for biology and genomics

Experience in software engineering (object oriented, version control system)

Good skills in C, C++ (Python is appreciated also), Interest or experience in parallelism

Good level of english (spanish, portuguese or french appreciated)

Duration: 1 year (renewable 1 year)

Location: Lyon

Targeted hiring date:15/10/2012

Salary: 2527 € gross not negotiable

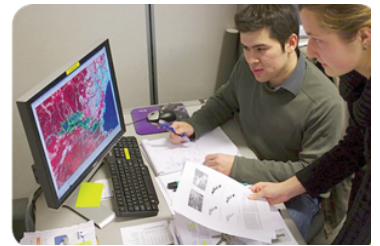
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## Research team

Planète

## Assignment

Because privacy considerations are central to smartphones, the Inria and the CNIL teams are working together in the context of the Mobilitics project. The goal of this project is to assess the risks in terms of privacy associated to the use of a smartphone, in particular because of personal information leakage to remote third parties.

This project involves the setup of an experimental platform, composed of mobile terminals (iPhone, iPad, Android phone), and requires the design of management, monitoring and data analysis tools. These are the tasks that the engineer will have to undertake.

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**Keywords:** privacy, smartphone, iPhone/iOS, Android

## Qualification & experiences

Ingénieur Jeune Diplômé : To be an engineering graduate or having equivalent qualification - To have obtained diploma in 2011 or 2012

## Skills & qualities

We are looking for somebody with strong skills in software development, project management and very autonomous. The job also requires a good level in English and a natural inclination for research. A preliminary experience in Android and/or iPhone development is a plus.

The work will be performed in collaboration with an engineer working on the iPhone/iOS part of the platform, with the Inria team members and with the CNIL engineers.

Duration: 12 or 24 months

Location: Montbonnot (10 km away from Grenoble)

Targeted hiring date: 15/10/2012

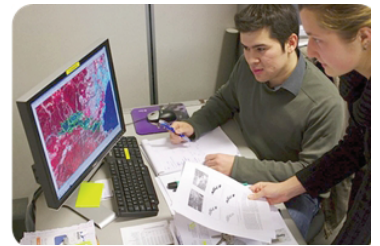
Salary: 2527 € gross not negotiable

This offer is available from 13/04/2012 to 30/09/2012

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### Research team

Bipop  
This project-team is concerned with non-smooth dynamical systems and non-smooth optimization. More precisely, modelling, control and numerical simulation are the main scientific topics. The basic tools therefore come from non-smooth mechanics, systems and control theory, non-smooth optimisation, and convex and non-smooth analysis.

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Human ressources contact  
Aurelia Mouton [aurelia.mouton@inria.fr](mailto:aurelia.mouton@inria.fr)

### Assignment

The position is devoted to the architectural design and the development of a software library for the simulation of rigid and flexible multi-body systems. The goal is to re-design and existing prototype, to increase its functionalities and to improve its genericity in order to address three main applications: The simulation of circuit breakers in collaboration with Schneider Electric, the simulation and the control of lunar and martian rovers with TRASYS Space and finally the development of new algorithms with ANSYS.

**Keywords:**

### Qualification & experiences

Ingénieur/Jeune Diplômé: To be an engineering graduate or having equivalent qualification - To have obtained diploma in 2011 or 2012



### Skills & qualities

Skills in applied mathematics and computational Mechanics. The applicant must like the numerical simulation and the associated development tasks. C++ language and English.

Duration: 12 months, renewable once

Location: Grenoble - Montbonnot

Targeted hiring date: 15/10/2012

Salary: 2527 € gross not negotiable



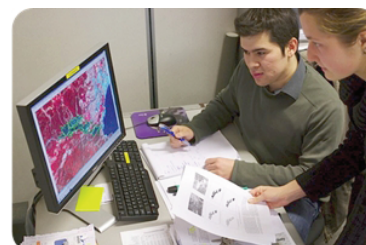
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## Research team

BEAGLE

INRIA Grenoble Rhône-Alpes

Antenne de Lyon La Doua

The Beagle team develops research related to « Artificial Evolution and Computational Biology ». Our research is located at the interface between experimental biology and computer science and aims at producing new results in biology by simulating cell systems and their dynamics.

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Human ressources contact  
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## Assignment

In tight interaction with biologists (INSERM Paris) and mathematicians (Univ Paris 5), the engineer to be hired will contribute a software that will have to be easy to use for experimental biologists, for automated quantitative analysis of bacterial cells from microscopy movies. As a co-developer, her/his role will mostly consist in software engineering (good practices, quality/modularity of the codes, software architecture), and in the development of GUI and visualization interfaces.

**Keywords:** Computer Science /Biology Interface, Image Analysis, Software Engineering

## Qualification & experiences

Ingénieur Jeune Diplômé : To be an engineering graduate or having equivalent qualification - To have obtained diploma in 2011 or 2012

## Skills & qualities

We are looking for candidates with good skills in programming (Java, C/C++) and software engineering. She/He will moreover have to show strong motivation for teamwork in a multidisciplinary context, in particular with biologists. However, pre-existing expertise in image analysis or computer science for biology (already present in the collaboration consortium) are not mandatory.

Duration: 12 months renewable once

Location: Lyon - Campus de La Doua

Targeted hiring date: 15/10/2012

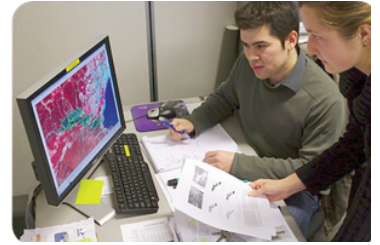
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## Research team

Moais (<http://moais.imag.fr>)

Imagine (<http://imagine.inrialpes.fr/>)

Both teams are located at INRIA  
Grenoble.

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## Assignment

Design, development and validation of a software framework (middleware) for virtual and augmented reality applications. We are targeting a new generation of applications running on a large range of platforms from immersive environments to smartphones.

The goal is to participate to the development of a new generation of scene graph generic enough to be used as a base for rendering, physics or sound for instance. These scene graph is expected to be distributed and parallel to take advantage of the new architectures (multi-core CPUs and GPUs, Cloud)

This work will rely on the OpenSG scene graph [www.opensg.org](http://www.opensg.org), the SOFA physics engine [www.sofa-framework.org](http://www.sofa-framework.org) and the FlowVR middleware [flowvr.sf.net](http://flowvr.sf.net).

**Keywords:** Scene Graph; Augmented and virtual reality; Advance programming

## Qualification & experiences

Ingénieur Jeune Diplômé : To be an engineering graduate or having equivalent qualification - To have obtained diploma in 2011 or 2012

## Skills & qualities

We are looking for a passionate software engineer with advanced C++ programming skills (templates, STL, boost, etc.), including system issues, parallelism (CPU and GPU), distribution (Cloud), rendering (OpenGL, Shaders), and physic simulation. Linux will be the first choice OS. This work is part of a collaborative process associated to an agile approach and good practices in software development (versioning tools, documentation, tests, continuous integration, etc.).

Duration: 12 months extendible

Location: Montbonnot (Grenoble suburb)

Targeted hiring date: 15/10/2012

Salary: 2527 € gross not negotiable

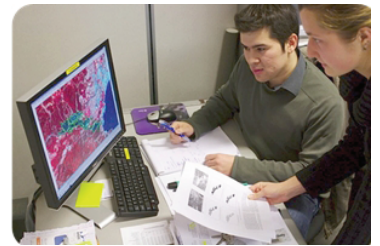
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Apply only online at: <http://www.inria.fr/en/young-graduate-engineers>

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Lille



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### Research team

MODAL research team is focused on data analysis based on probabilistic models, with application in biology. Some of its members are particularly interested in statistical modeling for the analysis of genomic data, in relation to the platform of functional and structural genomics of Lille.

<http://www.inria.fr/equipes/modal>

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Human resources contact  
karine.leroy@inria.fr

### Assignment

Develop an integrated suite of software tools to analyze genotyping data of a large number of patients. The originality of this result will come from the integration of the latest methods of data normalization methods with high-dimensional classification for a better selection of genomic markers.

Activities will include :

- Testing libraries for classification in high dimension.
- Participation in the choice of tools to integrate into the software suite.
- Analysis of genomic data.

**Keywords:** statistics genomics classification

### Qualification & experiences

Ingénieur Jeune Diplômé : To be an engineering graduate or having equivalent qualification - To have obtained diploma in 2011 or 2012

### Skills & qualities

- Knowledge of statistics and software development and related tools.
- Experienced in C++ and knowledge of R.
- Interest in biology.
- Good writing skills and teamwork capacity, efficient in technical English.
- Knowledge of Python, genomics or analysis of high dimensional data appreciated

Duration: 1 year renewable 1 time

Location: Villeneuve d'Ascq (France)

Targeted hiring date: 15/10/2012

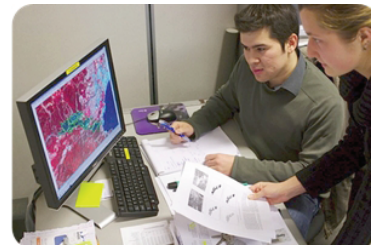
Salary: 2527 € gross not negotiable

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### Research team

FUN members imagine self-organization solutions for future wireless sensor, actuator and RFID networks to allow those kinds of networks to self-deploy, to every entity to discover, to communicate, to know when to sleep, when to transmit, etc. Solutions are validated through experiments.

<http://team.inria.fr/fun/>

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### Assignment

The engineer will carry out scientific experiments and developments within the team on middleware Aspire RFID. He / She will add missing features to the middleware based on new versions of EPCglobal standards ([www.epcglobinc.org](http://www.epcglobinc.org)). He/She will be responsible to finalize the packaging and tools attached for easy use by anyone else. To expand the user community, the engineer shall also setup a tutorial and a demonstrator for illustration features and services offered by this middleware.

**Keywords:** RFID standards Java

### Qualification & experiences

Ingénieur Jeune Diplômé : To be an engineering graduate or having equivalent qualification - To have obtained diploma in 2011 or 2012

### Skills & qualities

- Knowledge of software development and related tools (version control, compilation, documentation, testing, debugging) and Java
- Fluent in technical and scientific english
- Good writing skills and teamwork capacity.
- Knowledge of RFID and other programming languages appreciated

Duration: 1 year renewable 1 time

Location: Villeneuve d'Ascq (France)

Targeted hiring date: 15/10/2012

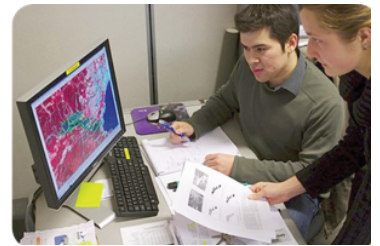
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## Research team

The goal of the RMoD research team at Inria Lille is to support re-modularization of object-oriented applications.

This objective is tackled from two complementary perspectives: reengineering and modularity constructs for programming languages.

<http://rmod.lille.inria.fr>.

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## Assignment

The engineer will work on virtual machines used by researchers in their daily work. We are working on an easy to understand and modify research virtual machine that is implemented in Smalltalk. The goal is not a fast production VM but instead an infrastructure that is easy to learn and extend for research experiments.

The work will include developing the research VM as well as helping with Pharo Smalltalk related VM level development:

- Extend and develop the research VM.
- Implement a simple Garbage Collector in Smalltalk for this VM.
- Help with Pharo VM related development.
- Improvement of the NativeBoost native code backend.

**Keywords:** Pharo VM language Smalltalk

## Qualification & experiences

Ingénieur Jeune Diplômé : To be an engineering graduate or having equivalent qualification - To have obtained diploma in 2011 or 2012

## Skills & qualities

- Knowledge in Dynamic Languages, preferably Smalltalk.
- Compiler construction
- Implementation of dynamic languages (Virtual Machines).
- Good knowledge in low-level programming (C, Asm).
- Fluent english.

Duration: 1 year renewable 1 time

Location: Villeneuve d'Ascq (France)

Targeted hiring date: 15/10/2012

Salary: 2527 € gross not negotiable

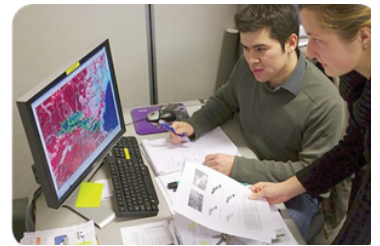
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### Research team

BONSAI is a bioinformatics research group. Its main goal of our research is to define combinatorial models and efficient algorithms for large-scale sequence analysis in molecular biology. This includes genome annotation, comparative genomics, Next Generation Sequencing, noncoding RNAs, genome rearrangements, non ribosomal peptides, high performance computing.

<http://www.inria.fr/equipes/bonsai>

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### Assignment

The engineer will carry out developments in the national project 'Inria Biosciences Resources'. The aim of this project is setting up a portal dedicated to bioinformatics applications developed by different teams or project of Inria.

The project includes setting up a portal, porting applications developed by several teams and provision of data so that users can test it.

Travel in other sites may be necessary.

**Keywords:** Bioinformatic Java Perl software portail  
Ontology

### Qualification & experiences

Ingénieur Jeune Diplômé : To be an engineering graduate or having equivalent qualification - To have obtained diploma in 2011 or 2012

### Skills & qualities

- Knowledge of software development and related tools (version control, compilation, documentation, testing, debugging) - Java and scripting languages (Perl, Shell)
- Fluent in technical and scientific english
- Good writing skills and teamwork capacity.
- Knowledge of Bioinformatics, Ontology languages and associated tools appreciated

Duration: 1 year renewable 1 time

Location: Villeneuve d'Ascq (France)

Targeted hiring date: 15/10/2012

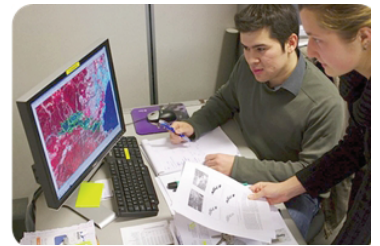
Salary: 2527 € gross not negotiable

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## Research team

ADAM team is a joint research team LIFL / Inria specialized in the design of infrastructures for deployment of complex systems at different scales (from Cloud environments to Mobile / Ubiquitous and Sensor Networks, with solutions being able to respond dynamically to changing needs of users and to evolutive contexts).

Scientist contact  
romain.rouvoy@inria.fr

Human ressources contact  
karine.leroy@inria.fr

## Assignment

The mission of the engineer will focus on consolidation and extension of the AntDroid software, which aims at making available to the scientific community a 'platform as a service' facilitating the collection of datasets from a significant population of mobile users.

The engineer will participate in activities such as :

- Software development and experimentation,
- Participation in technical choices,
- Preparation of documentation for users and support.
- Demonstrations and presentations of results.

**Keywords:** Cloud computing Android  
data collection

## Qualification & experiences

Ingénieur Jeune Diplômé : To be an engineering graduate or having equivalent qualification - To have obtained diploma in 2011 or 2012

## Skills & qualities

- Knowledge of software development and related tools
- Programming languages: Java, Javascript, etc. and good knowledge of XML, HTTP, HTML, CSS
- Appreciate technological and scientific innovation.
- Good writing skills, fluency in technical and scientific english.
- Knowledge of Android, REST, Scala, Python, XQuery and/or SCA appreciated

Duration: 1 year renewable 1 time

Location: Villeneuve d'Ascq (France)

Targeted hiring date: 15/10/2012

Salary: 2527 € gross not negotiable

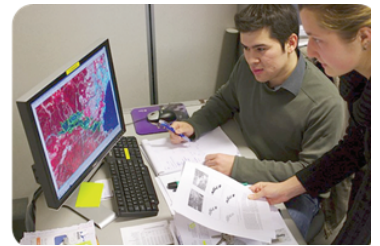
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Nancy



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## Research team

CAMEL is a research team at INRIA Nancy. It has has three main research themes:

- + The number field sieve algorithm and its siblings, for integer factorization and discrete logarithm in finite fields,
- + Algebraic curves for cryptography
- + Arithmetic in general (integers and floating-point numbers)

<http://www.inria.fr/en/teams/caramel>

Scientist contact  
[paul.zimmermann@inria.fr](mailto:paul.zimmermann@inria.fr)

Human resources contact  
[aurelie.aubry@inria.fr](mailto:aurelie.aubry@inria.fr)

## Assignment

WARNING: opening of this position is currently subject to investigation by Inria's legal and ethical committee.

Recruited in the CAMEL research team as "ingenieur confirmé", you will participate in the development of the CADO-NFS integer factorization program, to meet the following objectives:

- + enable the use of CADO-NFS on a cluster of 1000 cores, and on a cloud architecture, in particular Amazon EC2;
- + design tools to optimize the parameters in the critical "sieving step" of NFS;
- + extend the tests of CADO-NFS and make them more professional;

**Keywords:** Integer factorization, parallel and distributed computing, number field sieve

## Qualification & experiences

Ingenieur Confirmé : To be at least an engineering graduate or having equivalent qualification and to have from 2 to 7 years' software development experience

## Skills & qualities

Required skills: script languages (in particular Perl), parallel and distributed computing, Unix/Linux, C language, a significative experience in software development.

Not mandatory but welcome skills: x86/x86\_64 assembly, knowledge of Windows and MacOS.

Duration: 1 year renewable 1 time

Location: INRIA Nancy

Targeted hiring date: 15/10/2012

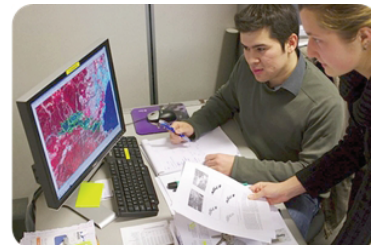
Salary: 2527 à 3054 € gross based on experience

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## Research team

PAROLE is a research team at INRIA Nancy specialized in speech processing. It gathers 30 researchers and staff covering topics such as automatic speech transcription and translation, interfaces for foreign language acquisition, and audiovisual speech synthesis. This position is part of a collaboration with the METISS (audio signal processing) and TEXMEX (multimedia indexing) teams of INRIA Rennes.

Scientist contact  
emmanuel.vincent@inria.fr

Human resources contact  
cr-nge@inria.fr

## Assignment

Source separation lies at the core of many applications of audio signal processing: denoising for mobile phones, hearing aids, voice command, remixing of music recordings...

Main tasks and responsibilities:

- develop a reference toolbox for audio source separation featuring algorithms developed by the team,
- perform tests for robust speech recognition in noisy environments.

The recruited engineer will be jointly supervised by a researcher and an R&D engineer.

**Keywords:** audio, automatic speech recognition, signal processing, C/C++, Java.

## Qualification & experiences

Ingénieur Jeune Diplômé : To be an engineering graduate or having equivalent qualification - To have obtained diploma in 2011 or 2012

## Skills & qualities

Mandatory skills:

- C/C++, Java and Matlab programming, creation of GUIs, version control,
- basic signal processing, experience working in a group.

Optional skills:

- audio signal processing, applied statistics, professional audio acquisition.

Duration: 1 year renewable 1 time

Location: INRIA Nancy

Targeted hiring date: 01/12/2012

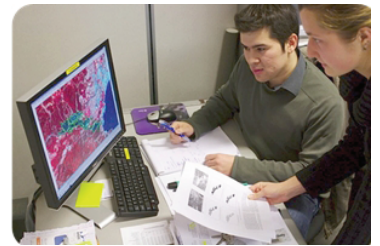
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## Research team

The ORPAILLEUR team works on knowledge discovery, knowledge representation, and semantic Web. In knowledge discovery data are prepared, mined, and then interpreted for becoming knowledge units. These units are in turn reused by knowledge-based systems. The ORPAILLEUR team has expertise in knowledge discovery guided by domain knowledge.

Scientist contact  
Amedeo Napoli

Human resources contact  
aurelie.aubry@inria.fr

## Assignment

The engineer will have to adapt a data mining platform, named Coron, to distributed computing and distributed data. He will work on:

- \* getting used to the Coron platform and to data mining algorithms
- \* studying candidate platforms for decentralized data mining and for the management of large data (such as Hadoop MapReduce)
- \* implementing distributed knowledge discovery algorithms (pattern mining, formal concept analysis)
- \* experimenting with real word data (biology, chemistry, medicine)

**Keywords:** Knowledge discovery, Big data, Distributed computing

## Qualification & experiences

Ingénieur Jeune Diplômé : To be an engineering graduate or having equivalent qualification - To have obtained diploma in 2011 or 2012

## Skills & qualities

Required: Data mining (principles and algorithms) or distributed programming  
Optional: Java or C++ programming, Hadoop

Duration: 1 year renewable 1 time

Location: INRIA Nancy - Grand Est

Targeted hiring date: 01/10/2012

Salary: 2527 € gross not negotiable

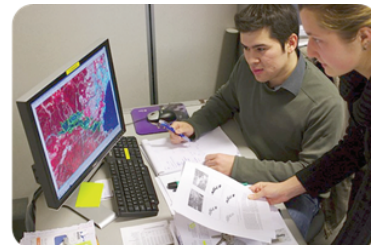
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Rennes



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## Research team

DISTRIBCOM

## Assignment

PLASMA is a new software that has been developed by young researchers at INRIA Rennes. PLASMA uses basic statistics to asses correctness of computer software.

Your mission:

- you design an interactive graphical interface for PLASMA
- you create a web site for the tool
- you study distributed versions of algorithms implemented in PLASMA
- you generat test cases
- you study the potential integration of the toolset in a smart phone

Scientist contact  
Axel Legay (alegay@inria.fr)

Human ressources contact

**Keywords:** distributed algorithms, smart phones, website, graphical interface, test cases

## Qualification & experiences

Ingénieur Jeune Diplômé : To be an engineering graduate or having equivalent qualification - To have obtained diploma in 2011 or 2012

## Skills & qualities

we need a good engineer with some experience in formal methods and a very solid programming background both in Java and C++. Good knowledge of common design patterns is also needed. Knowledge of technical terms in English language. Ability to work in a team.

Duration: 12 months extendible

Location: INRIA -- Rennes

Targeted hiring date: 01/09/2012

Salary: 2527 € gross not negotiable

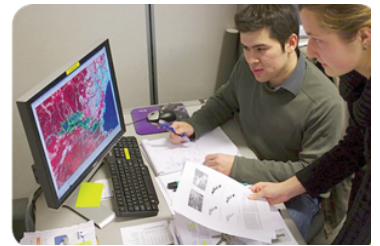
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### Research team

The research interests of the ALF team include computer architecture, software/compiler optimization, and real-time systems. The long-term goal of ALF is to let end-users benefit from the 2020's many-core processors.

Scientist contact  
erven.rohou@inria.fr

Human resources contact  
Myriam.Vinouze@irisa.fr

### Assignment

Because of the long lifetime of software, and the increasing diversity of hardware, a growing number of applications run on hardware that did not even exist when they were designed. In a cloud environment, resources are also shared with other unknown applications. These observations results in many opportunities to optimize software at run time.

The assignment consists in developing a software infrastructure for the implementation of such optimizations. This infrastructure shall facilitate automatic detection of hot spots, as well as code transformations. Optimizations shall happen on the unmodified binary code, while the application is running, and without any programmer's action.

The platform shall be sufficiently robust and documented to allow distribution.

**Keywords:** optimization, performance, portability, dynamic rewriting, architecture, microarchitecture.

### Qualification & experiences

Ingénieur Confirmé : To be at least an engineering graduate or having equivalent qualification and to have from 2 to 7 years' software development experience

### Skills & qualities

Good knowledge of the C language, possibly C++.

Good knowledge of Linux system programming.

Experience with compilation technology, experience with JIT compilers a plus.

Understanding of processor architecture and microarchitecture.

Knowledge of the x86 instruction set (32 et 64 bits).

Duration: 24 months

Location: Rennes, France

Targeted hiring date: 01/10/2012

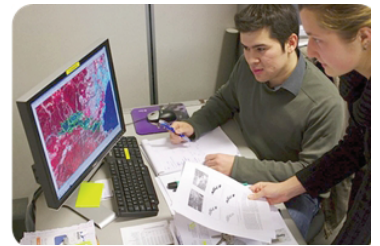
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## Research team

VR4I

Scientist contact  
anatole.lecuyer@inria.fr

Human ressources contact  
Myriam.Vinouze@irisa.fr

## Assignment

Software development for Brain-Computer Interfaces (enabling to send commands to machines or computers by means of cerebral activity only), and OpenViBE open-source software (<http://openvibe.inria.fr>).

Main assignments are : 1) redesign the software architecture of OpenViBE to enable extensions of its current capabilities, 2) develop new functionalities in OpenViBE, 3) supervise and lead the development activities of a team of young engineers, 4) support and disseminate OpenViBE.

**Keywords:** Brain-Computer Interfaces; C++, Open-Source, Software Architecture, OpenViBE

## Qualification & experiences

"Ingénieur Confirmé" : Engineering degree (or equivalent), with 2-8 year experience in Computer Science

## Skills & qualities

Background in computer science : ability to understand and exploit pre-existing softwares ;  
Programming language: C++ , excellent skills (debug, test, build, versioning, documentation) ;  
Excellent skills in software architecture ;  
Excellent skills in software development ;  
Good knowledge in technical and scientific English.

Duration: 12 months (+ 12 months)

Location: Rennes

Targeted hiring date: 01/10/2012

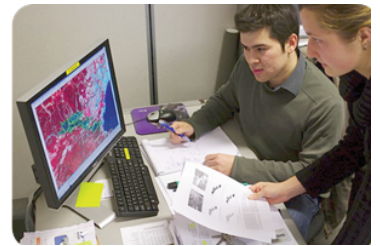
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## Research team

Visages Research Team (jointly affiliated with Inria / Inserm / CNRS):  
<https://www.irisa.fr/visages>

National collaboration with Inria research teams: Asclepios, Athena et Parietal

Scientist contact  
Olivier.Commowick@inria.fr

Human resources contact

## Assignment

This job proposal takes place in a national project medInria (<http://med.inria.fr>) aimed at developing for Inria a platform to show and distribute its research developments in medical image processing. This software, based on dtk ([dtk.inria.fr](http://dtk.inria.fr)) and Qt, will gather developments from the 4 major teams at Inria in this field. The recruited person will have two major objectives: further develop the application core (API, interface to define/run processing workflows, scripting - python, plugin web store). He/she will strongly collaborate with other teams on these aspects. He/she will also be in charge of developing plugins and their interface for the specific Visages team's research developments (registration of surfaces, diffusion imaging, tractography), and workflows for multiple sclerosis lesions segmentation.

**Keywords:** Medical imaging, Qt, image processing, visualization

## Qualification & experiences

Experienced Engineer : To be at least an engineering graduate or having equivalent qualification and to have from 2 to 7 years' software development experience

## Skills & qualities

Perfect knowledge of C++ language mandatory. Experience with the following libraries: ITK, VTK, Qt.  
Good knowledge of python. Good knowledge of version management softwares (SVN, Git)  
Skills (and experience) in medical image processing  
Autonomy and ability to work in a (nationally distributed) team  
French language would be a plus

Duration: 1 year (renewable)

Location: Rennes

Targeted hiring date: 01/10/2012

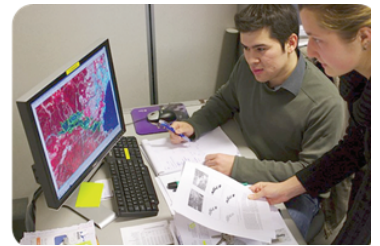
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## Research team

CIDRE

Scientist contact  
Ludovic.Me@inria.fr

Human resources contact  
Myriam.Vinouze@inria.fr

## Assignment

This projet aims at enhancing two pieces of software curruntly under development in INRIA and SUPELEC. These pieces of software (Blare and JBlare) monitor information flow respectively within the linux kernel and within the JVM JamVM. They allow the detection of illegal information flow, wrt a security policy previously defined.

The objectives of the projet will be:

- to enhance and finish the current tools (and, for the linux monitor, to prepare its inclusion in the staging branch of the kernel) ;
- to desing and realize a cooperation mechanism between the two tools ;
- to initiate a community (web, wiki, bug track, etc.) for these tools.

**Keywords:** Security, Intrusion Detection, Information Flow, Monitoring

## Qualification & experiences

Ingénieur Jeune Diplômé : To be an engineering graduate or having equivalent qualification - To have obtained diploma in 2011 or 2012

## Skills & qualities

Software development in the context of the linux kernel and in a java virtual mahine (JVM).

Duration: 1 year (renewable)

Location: Rennes, France (INRIA and SUPELEC)

Targeted hiring date: 15/10/2012

Salary: 2527 € gross not negotiable

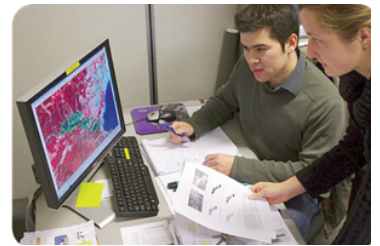
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Rocquencourt



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### Research team

SISYPHE (Signals and SYstems in Physiology & Engineering) deals with questions raised by some complex dynamical systems issued from Physiology and Engineering: modeling; identification and observation from signals; control.

Scientist contact  
frederique.clement@inria.fr

Human ressources contact  
fatima.ayad@inria.fr

### Assignment

The engineer will carry out scientific experiments and developments within a research team. He will participate in building a collaborative platform in Biomathematics dedicated to researchers in life sciences and clinicians. This platform will provide a simulation environment for laws of cell dynamics and will allow one to implement methods to analyze physiological and endocrinological data. The engineer will participate in a development and experimentation action within the research team. He will be involved in the following tasks:

- Software development and experimentation: design, implementation, testing, documentation of the GUI clients and/or of the business applications.
- platform maintenance and contact with end-users.

**Keywords:** Platform, simulation, GUI, web-services, interoperability, 3-tier architecture, SGBD

### Qualification & experiences

Ingénieur Jeune Diplômé : To be an engineering graduate or having equivalent qualification - To have obtained diploma in 2011 or 2012

### Skills & qualities

Software development skills and tools : IDE NetBeans or Eclipse, UML, SVN or Git, tests, software quality, Agile methods. Software Languages : JavaScript/HTML/PHP, Java/J2EE technologies (JSP/JSF, Servlets, EJB). Good knowledge of SGBD (data security, standardization) and 3-tier architecture. Technical and Scientific English. Appreciated skills : RESTful Services, Maven, GlassFish, PostgreSQL.

Duration: 16 month

Location: Rocquencourt (78) - France

Targeted hiring date: 01/09/2012

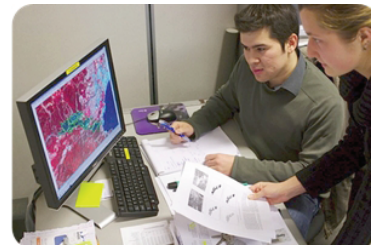
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## Research team

POMDAPI

Research center: INRIA Paris – Rocquencourt

Domaine de Voluceau, BP 105  
78153 Le Chesnay, France

Scientist contact  
jean-charles.gilbert@inria.fr

Human resources contact  
fatima.ayad@inria.fr

## Assignment

Development in C++ of a software library for solving differentiable optimization problems subject to constraints, based on the Newtonian or SQP approach. An original feature of the followed approach is to be grounded on a convex quadratic optimization solver using the augmented Lagrangian algorithm, which will have to be implemented. The library will be able to deal with dense and sparse problems (or those having more specific structures, such as in optimal control), as well as large scale problems (up to several millions of variables). The work will rest on preliminary developments made in Matlab (SQPlab) and Fortran (SQPpro).

**Keywords:** Optimization, C++

## Qualification & experiences

Ingénieur Jeune Diplômé : to be an engineering graduate or having equivalent qualification - to have obtained diploma in 2011 or 2012.

## Skills & qualities

To be interested by scientific computing and the development of C++ library in that domain. A good knowledge of numerical optimization techniques is appreciated.

Duration: 1 year renewable

Location: INRIA Rocquencourt

Targeted hiring date: 01/09/2012

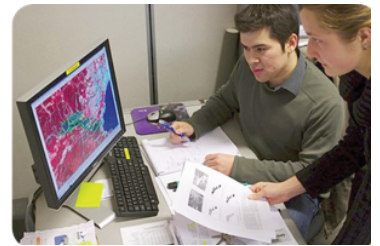
Salary: 2527 € gross not negotiable

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### Research team

The work of MuSync team-project is at the intersection of two important problems in computer music: Realtime recognition of music data from audio signals, and reactive synchronous programming in computer music. MuSync is housed at Ircam, the world leader in Sound and Music Computing, a unique place for the convergence of artistic and technological innovations. MuSync's research results are disseminated largely within the electronic music community.

Scientist contact  
arshia.cont@ircam.fr

Human ressources contact  
fatima.ayad@inria.fr

### Assignment

Antescofo is an award-winning software for computer music composition and performance, and features a dedicated synchronous programming language coupled to an artificial listening machine. This development mission consist in enriching the language interpreter in the first step by including common formats such as MusicXML, and in a second place to render its current architecture autonomous with a dedicated graphical interface. This project will allow the extension of Antescofo's applications to new artistic domains and assure its ongoing relationship with the ever growing user community.

**Keywords:** Computer Music, Realtime

### Qualification & experiences

Ingénieur Confirmé : To be at least an engineering graduate or having equivalent qualification and to have from 2 to 7 years' software development experience

### Skills & qualities

- Solid background in software engineering with C/C++
- Solid background and experience in realtime computer music (audio protocols, MIDI, XML, etc.)
- Solid background in language parsing and lexical analysis
- Familiarity with multi-platform GUI design (Juce, QT, etc.)
- Solid musical culture and willing to work in a collaborative environment with researchers and artists

Duration: 1 year, renewable

Location: Ircam - Centre Pompidou

Targeted hiring date: 01/01/2013

Salary: 2527 à 3054 € gross based on experience

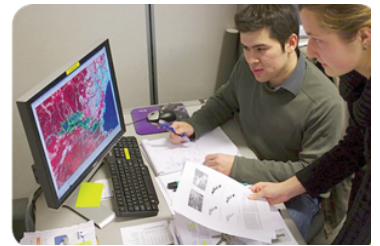
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## Research team

The ARLES research team focuses on defining languages, methods and tools for developing distributed software systems, as well as defining new middleware infrastructures for ubiquitous computing. Our research domains include pervasive computing, Internet of Things, and mobile social networking.

More at <http://www-roc.inria.fr/arles/>

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Human resources contact  
[Fatima.Ayad@inria.fr](mailto:Fatima.Ayad@inria.fr)

## Assignment

We are looking for an engineer to complement our research on mobile social networks, by achieving the following objectives:

- Preparing the first general public release of Yarta
- Implementing hooks to popular social networks for the Data Extraction Manager
- Incorporating technique to infer social links by analyzing non-social data such as call and SMS logs
- Developing an initial set of applications and releasing them on the Android Market and other venues
- Allowing the user to distribute his social knowledge between the various devices owned by him, such as a home desktop and a smart phone, including the ability to smartly cache this data based on social context

**Keywords:** Mobile Social Networks, Android, Java, Middleware

## Qualification & experiences

Ingénieur Jeune Diplômé : To be an engineering graduate or having equivalent qualification - To have obtained diploma in 2011 or 2012

## Skills & qualities

- Proficiency in Java 2SE, and its usage in the Android mobile operating system
- Ability to analyze existing software codebase and find performance bottlenecks
- Familiarity with software project management techniques and tools (version control, testing, etc.)
- Knowledge of Semantic Technologies (Ontologies, RDF, OWL)
- Excellent command over English

Duration: 1 year renewable

Location: Paris-Rocquencourt

Targeted hiring date: 01/07/2012

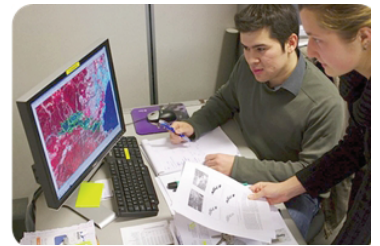
Salary: 2527 € gross not negotiable

This offer is available from 01/04/2012 to 30/09/2012

Apply only online at: <http://www.inria.fr/en/young-graduate-engineers>

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### Research team

The ALPAGE project-team (<http://alpage.inria.fr>) is concerned by Natural Language Processing (NLP), with, in particular, the development of a parsing processing chain for French based on a wide-coverage (meta-) grammar called FRMG (<http://alpage.inria.fr/parserdemo>).

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### Assignment

Given the large diversity of syntactic phenomena, sometimes very infrequent, the FRMG grammar is a complex object to extend, with outputs difficult to understand by the users. The objective of this proposal is to develop a WEB 2.0 service for documenting and exploiting FRMG, in an interactive and collaborative way.

The engineer will have to integrate several existing components (scripts and small Web services) in a unified plate-form for the documentation of FRMG (phase1), and its exploitation (phase2) through illustrative sentences and small textual corpora.

**Keywords:** wiki, CMS, grammar, natural language processing

### Qualification & experiences

Ingénieur Jeune Diplômé : To be an engineering graduate or having equivalent qualification - To have obtained diploma in 2011 or 2012

### Skills & qualities

- Programming skills : javascript, php, Perl ;
- Strong competences in Web 2.0 technologies (wiki, CMS [Drupal], Ajax, SQL, ...);
- Background in software development (versioning, compilation, documentation, tests, debug, ...);
- Bonus competences : NLP, linguistics (syntax)

Duration: 12 months - once renewable

Location: INRIA Paris-Rocquencourt

Targeted hiring date: 01/10/2012

Salary: 2527 € gross not negotiable

This offer is available from 01/04/2012 to 01/07/2012

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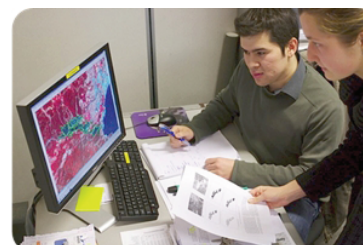
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# Saclay

No job offer for the moment.

Sophia



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## Research team

The Algorithms - Biology - Structure project-team, see <http://team.inria.fr/abs/>, undertakes algorithmic developments for structural bioinformatics, with two privileged applications, namely modeling protein complexes and modeling macro-molecular flexibility. These developments involve advanced geometric and topological modeling, coupled to scientific software development. In-silico validations are carried out on proteins and protein complexes.

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Human resources contact  
Marie-Line.Ramfos@inria.fr

## Assignment

The mission will consist of developing the reference C++ software suite for geometric and topological modeling in structural bioinformatics, consisting of:

- (i)ABS-Core: repackaged versions of our C++ applications, see <http://team.inria.fr/abs/software/>, into highly generic C++ classes.
- (ii)ABS-lib: instantiation of classes from ABS-Core for specific problems in structural biology.
- (iii)ABS-applis: updated versions of our applications using ABS-lib.
- (iii) ABS-frontends: plugins of our applications for VMD and Pymol, as well as web portals.

**Keywords:** van der Waals models, Voronoi diagrams, C++, generic programming.

## Qualification & experiences

Ingénieur Confirmé : To be at least an engineering graduate or having equivalent qualification and to have from 2 to 7 years' software development experience

## Skills & qualities

Advanced knowledge of geometric and topological modeling; advanced skills in C++ and generic programming, knowledge of the Computational Geometry Algorithms Library a plus; proficiency in python; good knowledge of biophysics and structural bioinformatics. The developments will be conducted using distributed revision control and source code management systems.

Duration: 12 months, renewable 1 time.

Location: INRIA Sophia-Antipolis

Targeted hiring date: 15/10/2012

Salary: 2527 à 3054 € gross based on experience

This offer is available from 23/04/2012 to 07/09/2012

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