



Offre n°2024-07272

Engineer hardware and firmware : Sailing, Augmented

Type de contrat : Fixed-term contract

Niveau de diplôme exigé : Graduate degree or equivalent

Autre diplôme apprécié : MsC/MEng

Fonction : Temporary scientific engineer

Niveau d'expérience souhaité : Recently graduated

Contexte et atouts du poste

For a better knowledge of the proposed research subject :

- AIO (<https://aio.inria.fr/>) is a leading research team in low-power wireless communications. The team is designing Tomorrow's Internet of (Important) Things. It pushes the limits of low-power wireless mesh networking by applying them to critical applications such as robotics, industrial control loops, with harsh reliability, scalability, security and energy constraints.

Collaboration :

- You will be working in the heart of the vibrant Inria-AIO team, and will receive lots of help if there are tasks you don't know how to carry out (which is normal from an intern!). Thomas Watteyne, the team lead, will be your mentor.
- You will be interacting with many other members of the Inria-AIO team. There will be many other members of the team working on localization, so you will have plenty of opportunities to learn from others.
- You will also be working closely with Falco/Wattson Elements.

Responsibilities :

- At the end of your internship, you will have made a major contribution by having put together a key test infrastructure used by the Inria-AIO team.
- We expect your solution to be used at the Olympic games. On the technical side, you will have worked with embedded programming, prototyping, Python software.
- More importantly, you will have developed a "system" view – looking at the full system and putting it all together -- and have worked following state-of-the-art code development tools and practices.
- From a scientific point of view, you will be invited to lead a scientific publication, which will be submitted to either a conference or a journal.

Mission confiée

Collaboration :

- The recruited engineer will work closely with Falco/Wattson Elements
- the work will be performed in collaboration with Ericsson and Orange using their 5G technology

Responsibilities :

- Develop a small box (the size of a matchbox) to measure a boat's movement and position to within 10 cm
- Send information from the box via Orange 5G technology with very low latency
- Apply the engineering development work to sailboat tracking in the Olympic games

Principales activités

Main activities:

- Sailing events at the olympics take place far from the public, and even if there are beautiful helicopter images, we can still only observe from afar. The aim of this project is to bring the spectators into the sailboats.
- From a technological point of view, it involves developing small boxes (the size of a matchbox) which is installed on each boat. These boxes measure the boat's movements, their position and the

- exact distance (to an accuracy of <10cm) between boats and buoys.
- This information is sent using Orange's 5G technology with very low latency, and can be used by media as a way to "augment" their images and boat data comments. We can therefore feel the forces at play, the way in which the boats brush against each other, the excitement of the crews.

Compétences

We are looking for recent graduate with a Masters of Engineering ("ingénieur") or Masters of Science (MSc, "Master") diploma.

- good "hard" skills
 - some embedded programming experience (understanding an electronic schematic, programming micro-controllers)
 - some experience with IoT systems, as a designer or a user.
 - "computer" programming skills (ideally Python), including some web development (understanding how browser and server communicate, some JavaScript visualization)
 - some understanding of software quality and project management tools (e.g. Git, GitHub, GitHub Actions)
- good "soft" skills
 - we are looking for the "technical leader" type.
 - ideally, some prototyping experience (3D printing, laser cutting, PCB assembly, ...). If you have built an automated watering solution for your house plants, let us know!
 - ideally, some open-source project experience, including source code and project management tools (Git, GitHub, etc)

Avantages

- Subsidized meals
- Partial reimbursement of public transport costs
- Leave: 7 weeks of annual leave + 10 extra days off due to RTT (statutory reduction in working hours) + possibility of exceptional leave (sick children, moving home, etc.)
- Possibility of teleworking and flexible organization of working hours (after 12 months of employment)
- Professional equipment available (videoconferencing, loan of computer equipment, etc.)
- Social, cultural and sports events and activities
- Access to vocational training
- Social security coverage

Informations générales

- **Thème/Domaine** : Networks and Telecommunications
Instrumentation et expérimentation (BAP C)
- **Ville** : Paris
- **Centre Inria** : [Centre Inria de Paris](#)
- **Date de prise de fonction souhaitée** : 2024-04-01
- **Durée de contrat** : 9 months
- **Date limite pour postuler** : 2024-06-30

Contacts

- **Équipe Inria** : [AIO](#)
- **Recruteur** :
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A propos d'Inria

Inria est l'institut national de recherche dédié aux sciences et technologies du numérique. Il emploie 2600 personnes. Ses 215 équipes-projets agiles, en général communes avec des partenaires académiques, impliquent plus de 3900 scientifiques pour relever les défis du numérique, souvent à l'interface d'autres disciplines. L'institut fait appel à de nombreux talents dans plus d'une quarantaine de métiers différents. 900 personnels d'appui à la recherche et à l'innovation contribuent à faire émerger et grandir des projets scientifiques ou entrepreneuriaux qui impactent le monde. Inria travaille avec de nombreuses entreprises et a accompagné la création de plus de 200 start-up. L'institut s'efforce ainsi de répondre aux enjeux de la transformation numérique de la science, de la société et de l'économie.

L'essentiel pour réussir

Broadly, we are looking for someone who is:

- independent and a fast learner
- at ease working on difficult technical hardware and software problems both alone and in a group
- good experience with software, particularly embedded systems
- potentially, interest in sailing and maritime applications

Attention: Les candidatures doivent être déposées en ligne sur le site Inria. Le traitement des candidatures adressées par d'autres canaux n'est pas garanti.

Consignes pour postuler

Sécurité défense :

Ce poste est susceptible d'être affecté dans une zone à régime restrictif (ZRR), telle que définie dans le décret n°2011-1425 relatif à la protection du potentiel scientifique et technique de la nation (PPST). L'autorisation d'accès à une zone est délivrée par le chef d'établissement, après avis ministériel favorable, tel que défini dans l'arrêté du 03 juillet 2012, relatif à la PPST. Un avis ministériel défavorable pour un poste affecté dans une ZRR aurait pour conséquence l'annulation du recrutement.

Politique de recrutement :

Dans le cadre de sa politique diversité, tous les postes Inria sont accessibles aux personnes en situation de handicap.