2018-00541 - Open Research & Development Post-doc/Engineer position available at INRIA (Chroma team) on planification and Control for Autonomous Vehicles in the Tornado project

Contrat renouvelable : Oui
Niveau de diplôme exigé : Bac + 5 ou équivalent
Fonction : Post-Doctorant

A propos du centre ou de la direction fonctionnelle
Grenoble Rhône-Alpes Research Center groups together a few less than 800 people in 35 research teams and 9 research support departments.

Staff is localized on 5 campuses in Grenoble and Lyon, in close collaboration with labs, research and higher education institutions in Grenoble and Lyon, but also with the economic players in these areas.

Present in the fields of software, high-performance computing, Internet of things, image and data, but also simulation in oceanography and biology, it participates at the best level of international scientific achievements and collaborations in both Europe and the rest of the world.

Contexte et atouts du poste
The Inria research team Chroma is involved in several academic and industrial projects in the field of Autonomous Vehicles. The proposed R&D work has to be performed in the scope of a French FUI project "Tornado", in cooperation with several companies and laboratories. The objective of INRIA in the project is to develop, to experimentally validate and to demonstrate the capabilities of an Embedded Perception and Decision-making system in the context of Mobile Robotics and Autonomous Vehicles applications. Several well published and patented results have already been obtained in the scope of this project.

Mission confiée
A one year (re-newable) Research & Development Post-doc or Engineer position is available at Inria Grenoble Rhône-Alpes, in the scope of the Tornado project. The objective is to develop an embedded perception and navigation system for autonomous mobile systems, with an emphasis on real world experiments performed using an automated Renault Zoé vehicle and some other industrial mobile robots.

Principales activités
The recruited engineer will work within a team of 4 engineers already working on different projects, with occasional interactions with some PhD students and researchers of the Chroma team. His main work will be to use occupancy grids and HD map to do long term trajectory planning, then to implement the work of a PhD student on decision making for crossing intersections. The implementations and the experimentations will be performed using the ROS framework, Gazebo simulation and the experimental platform of the IRT nanoelec (which includes an automated Renault Zoé vehicle). The recruited engineer will also contribute to the improvement of the experimental platform, and he will participate to some scientific publications, industrial conferences or various demonstrations.

Compétences
- Engineer with R&D experience or PhD in Computer Science, Robotics or closely related fields.
- Good theoretical and practical background in one of the following domains: Robotics, Multi-sensors perception, Scene Understanding, and/or Decision-making for safe navigation.
- Good skills in C/C++, Python and Linux.

The following qualifications would be an advantage:

Informations générales
- Thème/Domaine : Robotique et environnements intelligents
- Ingénierie logicielle (BAP E)
- Ville : Montbonnot
- Centre Inria : CRI Grenoble - Rhône-Alpes
- Date de prise de fonction souhaitée : 01-04-2018
- Durée de contrat : 1 an
- Date limite pour postuler : 30-06-2018

Contacts
- Equipe Inria : CHROMA
- Recruteur : Laugier Christian / christian.laugier@inria.fr

L'essentiel pour réussir
The ideal candidate is highly autonomous, with a strong interest in the Autonomous Vehicle field and all associated technologies.

Strong communication skills and teamwork abilities needed.

Conditions 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.

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.
- Experience using the Robotics library ROS
- Familiarity with CUDA and Boost libraries
- Theoretical knowledge of Bayesian models
- Ability to work as a teammate with other researchers
- Reasonable English skills (written and spoken)

**Avantages sociaux**
- Subsidised catering service
- Partially-reimbursed public transport
- Social security
- Paid leave
- Flexible working hours
- Sports facilities

**Rémunération**
*Gross salary:* 2650 Euros per month