2018-00607 - Open Research & Development Post-doc / Engineer position available at INRIA (Chroma team) on advanced perception for Autonomous Vehicles, EU Enable-S3 project

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 "Enable-S3", a European research project, in cooperation with several companies and laboratories. The objective of the project is to find alternatives to today's cost-intensive verification & validation efforts by more advanced and efficient methods to pave the way for the commercialization of highly automated cyber physical systems (ACPS). 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 Enable-S3 project. The objective is to build on the team's use of simulation platforms (based on Gazebo) to propose verification and validation approaches relying on the automated generation of tests scenarios, the choice of appropriate “Key Performance Indicators” (KPIs) and the statistical analysis of the tested scenarios. Both the team's patented embedded perception framework and decision-making approaches have to be validated using this approach. The validation approach is based on the use of a co-simulation paradigm, combining real world data and simulation results.

Principales activités
The recruited Post-doc / 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. The main task will be to understand the team's perception algorithms and to propose new approaches of test and validation methods or any subject related to the understanding of the scene for autonomous vehicle in a city. A Gazebo simulation will have to be built for the project, including bus and area where the project will be tested in real life. The implementations and the experimentations will be performed using the ROS framework, Gazebo simulation and multiple experimental platforms. The recruited engineer will also contribute to the improvement of the experimental platform of the team, and he/she 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 or Scene Understanding.
- Good skills in C/C++, Python and Linux.

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 : 12 mois
- 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 the 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.
The following qualifications would be an advantage:

- 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