2018-00308 - Customizing A Universal Social Network Bus for MOOCs

**Contract type:** Public service fixed-term contract  
**Level of qualifications required:** Graduate degree or equivalent  
**Fonction:** Temporary scientific engineer  
**Level of experience:** Up to 3 years

**Context**

**The SocialBus Research & Innovation Project**

Computer-mediated communication can be defined as any form of human communication achieved through computer technology. From its beginnings, it has been shaping the way humans interact with each other, and it has influenced many areas of society. There exist a plethora of social interaction services enabling computer-mediated social communication (e.g., Skype, Facebook Messenger, Telegram, WhatsApp, Slack, etc.). Based on personal preferences, users may prefer a social interaction services rather than another. As a result, users sharing same interests may not be able to interact since they are using incompatible technologies.

To tackle the above interoperability barrier, we propose *SocialBus*, a middleware solution targeted to enable the interaction via heterogeneous social interaction services.

A first version of the *SocialBus* software is available under the AGPL open source license at [https://gitlab.inria.fr/usnb/universal-social-network-bus](https://gitlab.inria.fr/usnb/universal-social-network-bus).

**References:**

- Rafael Angarita, Nikolaos Georgantas, Cristhian Parra, James Holston, Valérie Issarny. *Leveraging the Service Bus Paradigm for Computer-mediated Social Communication Interoperability*: International Conference on Software Engineering (ICSE), Software Engineering in Society (SEIS) Track, 2017. [https://hal.inria.fr/hal-01485213](https://hal.inria.fr/hal-01485213).
- Rafael Angarita, Nikolaos Georgantas, Valérie Issarny. *USNB: Enabling Universal Online Social Interactions*. IEEE International Conference on Collaboration and Internet Computing, 2017. Best paper award. [https://hal.inria.fr/hal-01591757](https://hal.inria.fr/hal-01591757).

**Assignment**

**Contribution**

As part of the further development of the USNB solution, the research engineer will specifically contribute to its customization for use in the context of MOOCs – Massive Open Online Courses, so as to support collaborative exercise among students at a massive scale.

The work will go along with the adoption of adequate software engineering practices, and the production of documentation.

**Main activities**

The R&D engineer will undertake the following activities:

- Design of mechanisms supporting collaborative exercises via social networks as part of MOOC.
- Design and implementation of the integration of the above mechanisms within *SocialBus*.
- Evaluation using an experiment as part of a reduced scale SPOC on

**General Information**

- **Theme/Domain:** Distributed Systems and middleware  
  Software engineering (BAP E)  
- **Town/city:** Paris  
- **Inria Center:** CRI de Paris  
- **Starting date:** 4/1/18  
- **Duration of contract:** 8 months  
- **Deadline to apply:** 5/31/18

**Contacts**

- **Inria Team:** MIMOVE  
- **Recruiter:** Issarny Valerie / valerie.issarny@inria.fr

**The keys to success**

The candidate should have interest and be willing to strengthen his/her expertise in the development of advanced software prototypes, from design to prototype implementation.

The candidate should have interest in online social networking.

The candidate should be both autonomous and a team worker.

**Conditions for application**

**Defence Security:**

This position is likely to be situated in a restricted area (ZRR), as defined in Decree No. 2011-1425 relating to the protection of national scientific and technical potential (PPST). Authorisation to enter an area is granted by the director of the unit, following a favourable Ministerial decision, as defined in the decree of 3 July 2012 relating to the PPST. An unfavourable Ministerial decision in respect of a position situated in a ZRR would result in the cancellation of the appointment.

**Recruitment Policy:**

As part of its diversity policy, all Inria positions are accessible to people with disabilities.

**Warning:** you must enter your e-mail address in order to save your application to Inria. Applications must be submitted online on the Inria website. Processing of applications sent from other channels is not guaranteed.
“Implementing Successful Processes for Citizen Participation: Supporting Methods and Civic Tech”.
- Recommendation for further evolution based on the evaluation.

**Skills**
Expertise, including experience in the implementation of related software prototypes, in one and possibly several of the following topics:
- Service oriented architectures,
- Middleware architectures and systems,
- Implementation on Java EE and/or Node.js,
- Implementation of Web APIs,
- Code generation,
- Use of data base management systems,
- Use of social networks.

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