Incentive mechanisms for participatory systems have been studied extensively in the

The worldwide use of the Internet and social networking has transformed the

Contexte et atouts du poste
The the constraints of time and space in human interaction: we can now be heard at a massive
scale unprecedented in human history. As a result, ICT may enable citizens to
undertake both government through direct assembly and collective action at a scale
and an efficacy previously considered impossible. Our research concerns this
opportunity to leverage a new sort of political life. We focus specifically on how
software systems may enable participatory democracy, that is, the participation of
citizens in democratic assembly, action, and governance.

Toward the above, we investigate supporting middleware infrastructures that in
particular enable universal social networking so as to allow citizens to engage using
their favorite online social network services. The resulting middleware is called
SocialBus and is released under open source license (at
https://gitlab.inria.fr/usnb/universal-social-network-bus)

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Mission confiée
In the above context, a key challenge of our work lies in providing the right incentive
for people to engage and keep getting involved.

Overcoming such a challenge through the study of relevant middleware support that
may be reused across participatory systems is the focus of the PhD.

Principales activités
Incentive mechanisms for participatory systems have been studied extensively in the

Informations générales
- Thème/Domaine : Systèmes distribués et intergiciels
- Ville : Paris
- Centre Inria : CRI de Paris
- Date de prise de fonction souhaitée : 01-10-2018
- Durée de contrat : 3 ans
- Date limite pour postuler : 23-04-2018

Contacts
- Équipe Inria : MIMOVE
- Recruteur : Issarny Valerie /
  valerie.issarny@inria.fr

L'essentiel pour réussir
The candidate should be interested in contributing to the development of
distributed systems, from design to prototype implementation and
experiment.

Interest in social networking and social
sciences is obviously a plus.

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
de l’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.
literature. Building upon the research background of the Inria MIMOVE team, the PhD will more specifically focus on the study of solutions that leverage mobile networking and the IoT. Indeed, these are two essential elements for connecting people with their environment and communities, which may serve sustaining people's participation across time.

The PhD work will in particular consider the following research questions:

- **How to leverage the IoT for participatory systems:** The objective here is to enrich the exchange among citizens through the provision of relevant observations from the physical environment. Things may further extend to "social things" (e.g., social bots) that autonomously communicate with the engaged citizens so as to foster interaction among them, while preserving their respective privacy.
- **How to support the continuous engagement of nomadic users:** Despite the increased capacity of smartphones, connectivity and relative resource constraints, esp. wrt energy, remain the norm. It is thus essential to customize protocols for the mobile case so that citizens are able to engage any-time, any-where, when that is the most relevant with respect to the purpose of the given participatory system.

To address the above questions, the PhD work will decompose into:

- State of the art survey of participatory systems and their applications, with a special focus on systems oriented toward participatory democracy, to become familiar of the overall topic of participatory systems and select a specific use case for experimental validation.
- Design of incentive mechanisms and supporting middleware protocols for participatory systems that leverage observations from both "physical" and "social" things, while preserving the required security and privacy properties.
- Customization of the proposed mechanisms for the mobile context.
- Prototype implementation of the above solutions as part of the SocialBus middleware.
- Evaluation of the proposed solutions.

**Compétences**

Technical skills and level required: Master degree in Computer Science or Computer Engineering is required. Programming skills.

Languages: Fluency in English is required; it is not necessary to speak French.

Relational skills: Team spirit is essential

Other valued appreciated: Autonomy.

**Avantages sociaux**

- Subsidised catering service
- Partially-reimbursed public transport

**Rémunération**

Gross Salary per month: 1 982 € the first 2 years and 2 085 € the last year