

# Research Grants for PhD students from the China Scholarship Council

Information Form (please read the guidelines carefully on the website [www-csc.utt.fr](http://www-csc.utt.fr))

Supervisor's name :  Given names :

Status (prof., assistant prof., ...):

Laboratory :  Website address :

Institution :  Website address :

Scientific competence of the supervisor:

The supervisor is mainly involved in embedded reconfigurable systems in the field of IoT. His current research interests deal with device adaptation, machine learning and embedded systems security. He is also very interested in communicating devices and the hardware implementation of such devices. He has been the supervisor of 15 phd students and he is the co-author of more than 80 international publications including journal and conferences. He has also participated in numerous research projects dealing with reconfigurable and communicating systems.

Two major publications in the field proposed for the PhD :

1.
2.

Website address of the personal page :

**Supervisor's email :**

**Description of the research work proposed for a PhD** **Topic # (see list) :**

Title :

Subject :

In this thesis, we focus on an application taken from the IoT domain, in which multiple objects can communicate within a network that is managed by a central gateway. In such devices, adaptability and flexibility are additional interesting features to provide clients with the capability of deploying new services closed to constrained networks and to offer edge computing. The main objective of this thesis is to deal with gateways' security aspects by proposing flexible and secure mechanisms that provide protection and trust to clients in the context of edge computing. The work will be based on mechanisms that have been currently proposed in the lab and rely on an open source solution. Moreover, another objective of the thesis is that the proposed software mechanisms (embedded libraries) will be easily implemented in various hypervisors, operating systems and applications. Finally, we aim to develop a secure reconfigurable gateway allowing clients to have their exclusive environment in which they can run their own services, use/share wireless connectivity and use/share hardware security accelerators. The flexibility and security offered to customers will be implemented on a hardware platform featuring RISC-V processors that will support the Trusted Execution Environment.

Keywords :

Expected collaborations :

Background required from the applicant :

Existence of a PDF file detailing the proposal ("yes" or "no") :

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