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Laboratoire des sciences de l'ingénieur, de l'informatique et de l'imagerie (Icube)
UMR 7537

UNIVERSITÉ DE STRASBOURG

à

Prof. Viktor Prasanna

Subject : Recommendation of Marc Frincu for USC PostDoc position
on Cloud Computing and Big Data Informatics

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I first met Marc Frîncu in 2007 when he was a student on an internship in my team at the INRIA research center of Nancy, France. I was at that time on the leave from my university on a researcher position. Although we have not directly worked together at that time, I know from my colleagues that he perfectly achieved his objectives during his internship, which led my colleagues to propose him to apply for a *CORDI* PhD funding at INRIA.

Marc preferred to return to Romania, where he went on with a PhD on a subject related to scheduling applications for Grids. This research theme is close to my owns, and I noticed during the last years the interesting results published by Marc in conferences in the domain.

During last summer, I learned that Marc was searching for a PostDoc position and I immediately proposed him to join us, to work on scheduling for clouds. This theme perfectly matched Marc's professional objectives. Marc joined us on last October, to participate in the national project SONGS [1] I am involved in. The objective is to enrich the existing Sim-Grid simulation toolkit with an API dedicated to the simulation of cloud-based systems. Simultaneously to the work on simulation, we carry on theoretical studies on the impact of different scheduling strategies on different types of workloads, that may correspond to certain activity types, or certain application models (e.g submission of independent jobs, or workflows, etc). These scheduling algorithms will be candidate solutions that could benefit from our cloud simulator development. Ideally, our simulation results will be compared to those produced in a real software framework, such as the one under development in our team.

Technical Contributions Since he arrived, Marc has actively participated in all these tasks. He is undoubtly able to work autonomously and bring new ideas that he has thoroughly tested before sharing them. He prefers to write them directly in a format that will be efficient to make a paper of it. Marc is hence very good at producing material such as text and experimental results that can be discussed by the rest of the team. He is also open-minded and takes into account all remarks and suggestions that may be made about his work.

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1. http ://infra-songs.gforge.inria.fr/

Current Contributions   In details, his contributions during his 9 first months with us are as follows :

- I asked him to recap works from the past year that were citing one of our paper, and which aspects were not addressed yet. He came up very shortly with a very good survey, which we have reworked and extended, and that we have submitted to a journal in february.
- He has focused on stuying cloud provisioning plus scheduling techniqaues for work-flows. He has been working on this on his own, with only some feedback from me. The preliminary study has been publish in the Cloudflow workshop at IPDPS this year.
- We are working to extend this work by a 50% increment for a journal special issue.
- Marc is also involved in the development of the cloud component of the SimGrid simulation toolkit. He has good programming skills, at least in Java and in shell scripts that he uses to produce graphic plots visualizing experiments results. He has been very quick to build up from existing Java code and spot existing bugs.

Leadership Potential   This cloud component development task is distributed on three sites and three groups of people (some modeling hypervisors at a lower level, some modeling whole systems such as EC2). I would not say Marc has been a leader in the job of creating some emulation among the different groups. Not mastering french was probably an obstacle, since some conversations ended up in french. However, i tink Marc feels more comfortable when he can handle the whole thing.

Proposal Compositions   Marc has been very active at composing proposal regarding its academic work. When he arrived, he was still expecting some review from a PostDoc proposal he had submitted in Romania. The month after, he was reusing the most relevant parts of this document to propose me to participate in a bi-national scientific cooperation program, to be submitted in last january. We ran out of time to achieve the sublission, but this shows that Marc is always taking initiatives in this field.

As a baseline, I would say have been favourably impressed so far by the capabilities of Marc to quickly identify and summarize relevant research issues, and then to write it in a very fluent style. He is both a very autonomous, and hard-working person. I hope Marc's stay (one year) at or institution will be long enough to achieve the numerous objective I would like him to undertake. Finally, i would summarize by saying that Marc's work is discreet but efficient.

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