April 9th, 2015

To whom it may concern:

I am writing this letter to assess the research and development skills of Rahulkumar Gayatri, as well as his knowledge in the area of parallel programming models.

My name is Dr. Rosa M. Badia, and I am the manager of the Workflows and Distributed Computing group at the Barcelona Supercomputing Center (BSC). This center hosts the Marenostrum supercomputer, as of this year, the 57th fastest supercomputer in the world. I hold a PhD from the Universitat Politecnica de Catalunya (UPC), where I also graduated from Computer Science in 1989, and, at the Computer Architecture Department (DAC), held an Associate Professor position from 1997 to 2008. Currently, I am a Scientific Researcher at the Spanish National Research Council (CSIC), and also a part-time lecturer at UPC.

The group lead by myself has been developing the StarSs programming model and its previous instances for more than 10 years, with a high success in adoption by application developers, for example, by its use in production in the MareNostrum supercomputer and as enabling technology in the MontBlanc project for the porting of HPC applications to energy-efficient platoforms.

During my research career I have published more than 150 papers in international conferences and journals in the topics of her research. I have participated in several European projects, for example BEinGRID, Brein, CoreGRID, OGF-Europe, SIENA, VENUS-C, TEXT and TERAFLUX and currently I am participating in the project Severo Ochoa (at Spanish level), transPLANT, Euroserver, ASCETIC, the Human Brain Project and EU Brazil Cloud Connect and I am a member of HiPEAC2 NoE.

Rahulkumar has been affiliated in my group since September 2009 till March 2015 at the Barcelona Supercomputing Center as a PhD student. During this period he has taken part in different R&D projects, developing software and carrying out many other research activities.

As a part of his PhD degree, Rahulkumar has done research on the topic of using speculative techniques for the synchronization of multiple threads. He integrated a SoftwareTransactional Memory (STM) framework into the StarSs programming model and has successfully implemented optimistic synchronization mechanisms. He modified the StarSs compiler and runtime to achieve the required targets. He performed an in-depth analysis on the effects of speculation and also analyzed the trade-off between its benefits and the overhead of its implementation.

In this period, Rahulkumar has mainly developed his activity within the framework of funded projects like TERAFLUX, a project supported by the European Union and the FI-AGUR grant from the Catalan government which he was awarded in the year of 2010.

In the TERAFLUX project, his duties included the implementation and analysis of the idea of using STM-based concurrency to update critical memory. He achieved this goal within the given timeframe. He has shown very good technical skills, high learning capacity, high curiosity to learn new topics, and good analysis capacities. Also, he has integrated very well into our research team with good capacities to work within a group.

For this reason, I think Rahulkumar is a valuable asset, and has my highest recommendation. If you have any further questions with regard to his background or abilities, please do not hesitate in contacting me.

I totally recommend Rahulkumar as a candidate for your team.

Yours sincerely,

Dr Rosa M. Badia
Barcelona Supercomputing Center
Workflows and Distributed Computing Manager