



March 24<sup>th</sup>, 2012

S.S. Iyengar PhD

Director and Ryder Professor

School of Computing and Information Sciences

FIU, 11200 SW 8th Street, Miami, Florida 33199, USA

Dear Prof. Iyengar,

I am deeply honoured to have had the chance to discuss my past research on the Brooks-Iyengar algorithm on Robust Distributed Sensing and its application in Linux Operating Systems, as discussed on the phone last week.

As I mentioned, in 1993 I was a researcher in the field of Real-Time Operating Systems (with a focus on Real-Time scheduling). During that period of research I was able to define new RT scheduling algorithms, and I included these (and other RT techniques) in the first existing RT version of an open-source OS (RT-Minix). The MINIX operating system was extended with real-time services, ranging from A/D drivers to new scheduling algorithms and statistics collection. A testbed was constructed to test several sensor replication techniques in order to implement and verify several robust sensing algorithms. As a result, new services enhancing fault tolerance for replicated sensors were also provided within the kernel. The resulting OS offers new features such as real-time task management (for both periodic or a periodic tasks), clock resolution handling, and sensor replication manipulate

Using this workbench, we implemented different versions of the Brooks-Iyengar algorithm for robust sensing, using inexact agreement and optimal region. The introduction of this new mechanism provided more accuracy and precision.

These results were published in various papers and a book. My ideas were used shortly after by other researchers in the field, leading to the development of the first versions of RT-Linux. Fifteen years after, this approach continues to be used and cited, and new Real-Time projects based on the concepts I defined have been started in the last 5 years.

I congratulate you on your numerous successful endeavours, and wish you the best of luck. Sincerely,

Dr. Gabriel Wainer

Associate Professor

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About myself: I am a Senior Member of SCS and IEEE. I received a Ph.D. (1998, *with highest honors*) at the Universite d'Aix-Marseille III, France. In July 2000, I joined the Dept. of Systems and Computer Engineering at Carleton University. I have authored three books and over 260 research articles; I edited four other books and helped organizing over 110 conferences. I am Vice-President Publications of the SCS (Society for Modeling and Simulation International). I am Special Issues Editor of SIMULATION, member of the Editorial Board of Wireless Networks (Elsevier), Journal of Defense Modeling and Simulation (SCS), and International Journal of

Simulation and Process Modelling (Inderscience). I have received the IBM Eclipse Innovation Award, the SCS Leadership Award, various Best Paper awards; also, Carleton University's Research Achievement Award (2005), the First Bernard P. Zeigler DEVS Modeling and Simulation Award (2010), and the SCS Outstanding Professional Award (2011).