

Daniel A. Menascé, 2001 A. A. Michelson Award Acceptance Speech

Jeff, thank you very much for your nice words. I must say I am really thrilled for receiving the 2001 A. A. Michelson award. The fact that this award is presented to me by Jeff Buzen and during his tenure as President of the Computer Measurement Group (CMG) is an added honor. Jeff's seminal work on efficient solution algorithms for closed queuing networks and on operational analysis was an inspiration to me and to many others. It is also an interesting coincidence that exactly 20 years ago I was presenting my first CMG paper and Jeff was a referee for that paper.

I would like to thank CMG, its Board of Directors, the A. A. Michelson Award Committee, previous Michelson award recipients, my nominator Peter Denning, and my two endorsers Jeff Buzen and Connie Smith for their various roles in the process that led to my selection as the 2001 A. A. Michelson award recipient.

During my career, I had the opportunity to collaborate with many fine and smart people and with a very large number of students. I would like to thank them all for productive interactions and prolific exchange of ideas. I cannot name them all here. But, I could not fail to mention my collaborator of over twenty years and my very good friend, Virgilio Almeida, who is my co-author in many papers and in all my books.

Receiving a lifetime achievement award makes one reflect upon the past. When I examine the achievements of the field of computer measurement and performance evaluation during the past thirty years or so, I realize that there is a lot our profession should be proud of. As computer systems evolved from the first time-sharing systems to networked client-server systems and then to Web-based information and transactional systems, we as a community came up with models, measurement approaches, and tools to help evaluate, size, and tune these systems. Unfortunately, for quite some time, these success stories and the recognition of the importance of our field were somehow circumscribed to our own discipline and to its practitioners. This fact prompted Domenico Ferrari, the 1987 A. A. Michelson award recipient, to write a paper in 1986 in which he discussed the insularity of performance evaluation (*IEEE Tr. Software Engineering*, June 1986). Things have changed with the Web. Computer systems became highly accessible to millions of users. Their performance failures became highly noticeable and became newsworthy in the non-technical media. Quality of service, measured in terms of performance and availability metrics, became essential to the success of Web and e-commerce sites.

Today, performance is no longer a concern of a few. Sound scientific techniques for performance measurement and modeling should become an integral part of the process of designing, building, and maintaining computer systems. Every computer professional, from software developers to database administrators to network engineers to systems administrators, should master the basics of quantitative performance analysis. It is with this strong belief that I have always incorporated performance evaluation methods into any of the courses I teach, even when they are not performance-related courses. In an attempt to bring quantitative performance evaluation to a much larger audience, I have

written books that are at the same time rigorous, easy to understand, and bring performance analysis tools and methods that can be readily put into practice. The recognition I have obtained from many of my readers gives me great satisfaction and I thank them for their continued encouragement.

So much for the past. What is ahead of us? There are new phenomena in Web and e-commerce environments including various instances of heavy-tailed distributions in the workload and the modeling challenges they bring. The Web is evolving into the Web services paradigm. This brings the notion of dynamically composable software systems that find their various components at run-time by using distributed discovery services. These environments will bring fascinating challenges to our community. Another appealing area of research is the use of performance models for the dynamic QoS control of computer systems. I have been pursuing these ideas recently in my lab, at the E-center for E-business at George Mason University, and I am energized by the results we have obtained so far.

Last but not least, I would like to acknowledge my wife Gilda, who is here with me today and has been with me for the past 34 years. She gave me two wonderful children, Flavio and Juliana, who along with her have been the joy of my life.

In conclusion, it has been a lot of fun to work in this field and it has been very rewarding for me to be a member of CMG, to participate in its national conference, and to meet so many interesting people. Thank you very much.