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## **An ICN design, supported by opportunistic search, routing and caching policies (Design of Information centric networks)**

### **Abstract**

Information centric networks (ICN) has gained significant attention in recent years as a candidate to make the Internet more content-centric. However, many challenges still have to be investigated so that new concepts can be put into practice in an efficient way. We propose a network where routing of requests is based on random walks and content placement is done using a novel mechanism referred to as “reinforced counters”. We obtain performance metrics, such as mean time to find a searched content and the load experienced by the servers custodians, to evaluate the performance of such architecture. We also address questions such as how to store and evict contents from a cache in flexible and scalable manner and how to efficiently and distributedly place content in the network of caches.

### **Biographical Sketch**

Edmundo de Souza e Silva received the B.Sc. and M.Sc. degrees in electrical engineering, both from Pontifical Catholic University of Rio de Janeiro (PUC/RJ), and the Ph.D. degree in computer science from the University of California, Los Angeles in 1984.

Edmundo was a visiting professor/researcher at renowned universities and research centers including the IBM T.J. Watson research Center, IBM Tokyo Research Laboratory, UCLA Department of Computer Science, Computer Science Department at USC, Politecnico di Torino, Chinese University of Hong Kong, IRISA/INRIA-Rennes, University of Massachusetts at Amherst.

He has served as Technical Program Committee co-Chair of major international conferences including IEEE/Globecom'1999, ITC'2001, ACM/Sigmetrics'2002, IEEE/Infocom 2009. Edmundo was elected for the ACM/SIGMETRICS Board of Directors for 2 terms (2001-2005), and was Chair of the IFIP WG 7.3 for the 2008-2014 terms. He serves on the Editorial Board of the Journal of Internet Services and Applications (Springer) and the ACM Transactions on Modeling and Performance Evaluation of Computing Systems. He is a member of the Brazilian Academy of Sciences and the National Academy of Engineering. In 2008 he received the medal of the National Order of Scientific Merit.

Currently he is a professor of the Systems Engineering and Computer Science at the Federal University of Rio de Janeiro, COPPE. His areas of interest include the modeling and analysis of computer systems and computer communication multimedia networks.