

ALOHA to the Web

Keynote

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ABSTRACT

Wireless access to the Internet today is provided predominantly by random access ALOHA channels connecting a wide variety of user devices. ALOHA channels were first analyzed, implemented and demonstrated in the ALOHA network at the University of Hawaii in June, 1971. In this talk we provide a history of the ALOHA Network from a technological point of view illustrated with photos of the original ALOHA equipment designed and built at UH in the early 1970's.

The architectural design choices made in the original ALOHA Network were influenced by the perceived traffic demands of ALOHA users. As ALOHA based random access channels were adopted by other types of networks (satellite, Ethernet, WiFi, mobile phone, cable) and other types of users, some of these design choices were reevaluated so that the architecture of networks utilizing ALOHA assumed several different forms. We use the history of the ALOHA Network to categorize these forms and to speculate on future choices of network architecture.

BIO

Norman Abramson is Professor Emeritus at the University of Hawaii. He has served as Professor of Electrical Engineering, Professor and Chair of Information Science and Director of the ALOHA Network at UH. He has also been a member of the faculty at Stanford, and a visiting member of the faculty at Berkeley, Harvard and MIT.

Abramson is the recipient of various awards for his work on random access channels and the ALOHA Network, the first wireless data network. Among these awards are the Eduard Rhein Foundation Technology Award (Munich, 2000), the IEEE Alexander Graham Bell Medal (Philadelphia, 2007) and the NEC C&C Foundation Award (Tokyo, 2011). Abramson received an A.B. in physics from Harvard College in 1953, an M.A. in physics from UCLA in 1955, and a Ph.D. in Electrical Engineering from Stanford in 1958.

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