Johns Hopkins Institute for Assured Autonomy and the Department of Computer Science

Present

The Network as a Programmable Platform

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ABSTRACT

Networks have historically been treated as plumbing, used to interconnect computing systems to build larger distributed computing systems, but advances in Software-Defined Networks (SDN) make it possible to treat the network, itself, as a programmable platform. Networks can now be programmed end-to-end and top-to-bottom. This talk discusses how this programmability can be used to support verifiable closed-loop control, including throughout 5G mobile networks. The talk also describes our experiences building Aether, an open source 5G-enabled edge cloud that demonstrates the value of treating the network as a programmable platform. A pilot deployment of Aether is being deployed in campuses and enterprises around the world.

BIO

Larry Peterson is the Robert E. Kahn Professor of Computer Science, Emeritus at Princeton University, where he served as Chair from 2003-2009. He is a co-author of the best selling networking textbook *Computer Networks: A Systems Approach (6e)*, which is now available as open source on GitHub. His research focuses on the design, implementation, and operation of Internet-scale distributed systems, including the widely used PlanetLab and MeasurementLab platforms. He is currently working on a new access edge cloud called CORD, an open source project of the Open Networking Foundation (ONF), where he serves the CTO.

Professor Peterson is a former Editor-in-Chief of the ACM Transactions on Computer Systems, and served as program chair for SOSP, NSDI, and HotNets. He is a member of the National Academy of Engineering, a Fellow of the ACM and the IEEE, the 2010 recipient of the IEEE Kobayashi Computer and Communication Award, and the 2013 recipient of the ACM SIGCOMM Award. He received his Ph.D. degree from Purdue University in 1985.

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