

Putting the Cloud in the Palm of Your Hand

Webcast Type:

Technical Plenary Session

[2012 IEEE International Conference on Communications](#)**Webcast URL:**http://host.comsoc.org/livebroadcast/icc12/keynote_bahl.html**Status:**

Free for Everyone

Duration:

40minutes

Presentation Date:

Sun, 06/10/2012

Abstract:

Resource poverty is a fundamental constraint that severely limits the type of applications that can be run on mobile devices. This constraint is not just a temporary limitation of current technology, but is intrinsic to mobility. On one hand are small form factor handheld devices and on the other is the cloud, a nearly limitless pool of computing resources. It is natural to connect and combine the two to enable a new class of CPU- and data-intensive applications that seamlessly augment the cognitive abilities of users. In this talk, I will put forth a vision of mobile computing that breaks free of the fundamental constraints that have been keeping us from discovering an entirely new world in which mobile computing seamlessly augments the cognitive abilities of users using compute-intensive capabilities such as speech recognition, natural language processing, computer vision and graphics, machine learning, augmented reality, planning and decision-making. By thus empowering mobile users, we could transform many areas of human activity like never before. In this vision, mobile users seamlessly utilize the cloud to obtain the resource benefits without incurring delays and jitter and without worrying about energy. I will highlight some of the challenges we face and some of the solutions we are pursuing along with the successes we are having.

Speaker Bio:

Victor Bahl is the Director of the Mobile Computing Research Center (MCRC) in Microsoft Research. Prior to MCRC, Victor founded the Networking Research Group and served as its manager for 8 years. He continues to help shape Microsoft's long-term vision related to networking technologies through research and associated policy engagement with governments and institutions around the world. His personal research interests span a variety of topics in mobile computing, wireless systems, cloud computing and datacenter / enterprise networking &

management. He has built and deployed several seminal and highly cited systems many of which have been broadly adopted by the computing industry and shipped in Microsoft products. He has authored over 115 peer-reviewed papers and 86 patents. He has received several notable accolades including Microsoft's Individual Performance Award (three times), SIGMOBILE's Distinguished Service Award, IEEE's Northwest Region 6 Outstanding Engineer Award, UMASS Amherst's Distinguished Alumni Award, SIGCOMM's and CoNext's Best Paper Award, FCC's Open Internet App. Award and FCC's People's Choice App Award. Dr. Bahl is a Fellow of the ACM, IEEE and AAAS.

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