

Mobilize!

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Mobilize!

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Abstract

Mobility has traditionally been viewed as a nuisance that has to be catered for in the design of a wireless network. In this talk we propose a different point of view: mobility can in fact be exploited to improve performance significantly. We survey three recent bodies of work to support this viewpoint. First, we describe how mobility-induced channel time-variations can be exploited in the design of scheduling algorithms for cellular data networks. Second, we explain how the capacity of adhoc networks can be greatly increased when there is mobility. Third, we look at how mobility can be taken advantage of in the design of adhoc network routing algorithms.

Biography

David Tse received the B.A.Sc. degree in systems design engineering from University of Waterloo, Canada in 1989, and the M.S. and Ph.D. degrees in electrical engineering from Massachusetts Institute of Technology in 1991 and 1994 respectively. From 1994 to 1995, he was a postdoctoral member of technical staff at A.T. & T. Bell Laboratories. Since 1995, he has been at the Department of Electrical Engineering and Computer Sciences in the University of California at Berkeley, where he is currently a Professor. He received a 1967 NSERC 4-year graduate fellowship from the government of Canada in 1989, a NSF CAREER award in 1998, the Best Paper Awards at the Infocom 1998 and Infocom 2001 conferences, the Erlang Prize in 2000 from the INFORMS Applied Probability Society, and the IEEE Communications and Information Theory Society Joint Paper Award in 2001. He is currently an Associate Editor for the IEEE Transactions on Information Theory. His research interests are in information theory, wireless communications and networking.