

## **Design of Vehicular Ad-Hoc Networks (VANETs) and Applications in Disconnected Environments**

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### **Abstract:**

Mobile communication via WiFi and cellular networks has revolutionized the data we have available at our fingertips. Even while traveling at high rates of speed, users are able to communicate on the Internet. As the majority of the world lives within urban environments that have strongly-connected cellular and WiFi networks, many people take for granted that they are always able to access information from the Internet. In non-urban environments that lack the cellular and wireless infrastructure, vehicular ad-hoc networks (VANETs) can be used to communicate. Through multiple hops, vehicles in a disconnected environment can communicate on the Internet, though receiving data back gets complicated because of a potentially changed route based on the mobility of the vehicles. This talk will discuss the design of a VANET and potential applications that can be used as a result.

### **Biography:**

Dr. Jeffrey Miller is an Associate Professor of Computer Engineering at the University of Alaska Anchorage. He earned a Ph.D. in Computer Science from the University of Southern California in 2007 with an emphasis in networking, algorithms, and software engineering, with a specific application in the field of Intelligent Transportation Systems. He is on the Executive Committee and Board of Governors for the IEEE Intelligent Transportation Systems Society and the IEEE Vehicular Technology Society. He is currently the Editor-in-Chief for the IEEE Intelligent Transportation Systems Magazine. His research interests include data gathering from vehicles in real-time through vehicle-to-infrastructure (V2I) and vehicle-to-vehicle (V2V) architectures, utilizing distributed algorithms within those networks, and creating software simulators based on live and historical data for testing algorithms prior to large-scale deployment.