



## **SEMINAR**

### ***Modeling Instantaneous Multihop Connectivity of Inter-Vehicle Communication***

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**1:00 p.m. - 2:00 p.m.**

**Room 3008 in the Calit2 Building**

With wireless communication devices becoming ubiquitous, Advanced Transportation Information Systems based on Inter-Vehicle Communication (IVC) are receiving increasing attention due to their fast response to incidents and resilience to disasters. In such IVC systems, vehicles equipped with wireless devices form a mobile ad hoc network, whose multi-hop connectivity is an important performance measurement. This talk presents an analytical recursive model and a Monte Carlo simulation model for computing the probability for two equipped vehicles or road-side stations to be connected through IVC. These models are derived based on the assumption that inter-vehicle communication is instantaneous with respect to vehicle movement and the concept of Most-Forwarded-within-Range communication chains. The two models, which cross-validate each other, are able to capture the impact of traffic patterns on IVC and yield results consistent with those in literature. Some future research directions will also be discussed.

\* Dr. Jin is a candidate for the Calit2 transportation engineering faculty position in Civil and Environmental Engineering.