Hamilton Institute

Exploit prediction to handle mobility in wireless ad hoc networks

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Abstract:
Node mobility is often a hindering factor of the networking process in wireless ad hoc networks. In this talk, we will introduce our two recent works that address this problem through a prediction approach.

The first work proposes an AutoRegressive Hello protocol (ARH) for mobile ad hoc networks. A hello protocol is a basic tool for neighborhood discovery. It requires nodes to claim their existence/aliveness by periodic 'hello' messages. ARH evolves along with network dynamics by predicting node mobility, and seamlessly tunes itself to obtain 'hello' frequency using local knowledge only.

The second work proposes a distributed Prediction-based Secure and Reliable routing framework (PSR) for wireless body area networks. In this protocol, each node predicts the quality of every incidental link and any change in the neighbor set too, based on an autoregressive model. According to the prediction result, it selects routing next hope and decides whether to enables/disables source authentication.

Biography:
Dr. Xu Li is a research scientist in the FUN research group at Inria Lille - Nord Europe, France. Prior to joining Inria, he worked as a postdoc fellow at several locations: the University of Waterloo; Inria/CNRS; and the University of Ottawa. He received a PhD (2008) degree from Carleton University, Canada, an MSc (2005) degree from the University of Ottawa, and a BSc (1998) degree from Jilin University, China, all in computer science. His research interests are in the areas of machine-to-machine communications and mobile social networks. He has published more than 60 refereed papers in those fields.

Venue: Seminar Room, Hamilton Institute, Rye Hall, NUI Maynooth

Time: 2.00pm - 3.00pm

Travel directions are available at www.hamilton.ie

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