Abstract
There has been growing interest in vehicle to vehicle communications for a broad range of applications ranging from safe driving to content distribution, advertising, commerce and games. One relatively new application is urban sensing. Vehicles monitor the environment, classify the events, e.g., license plates, pollution readings, etc. and exchange metadata with neighbors in a peer-to-peer fashion, creating a distributed index from which mobile users can extract different views. For instance, the Department of Transportation captures traffic statistics; the Department of Health monitors pollutants, and; Law Enforcement Agents investigate crimes. Mobile, vehicular sensing differs radically from conventional, static sensor operations. Vehicles have abundant battery life, processing power and storage capacity. Moreover, as they move, they continually generate new data, making conventional sensor data collection techniques inadequate. In this talk we first review promising urban sensing applications; then, we introduce MobEyes, a middleware solution that works for all applications and that, via diffusion of data summaries, creates a distributed index of the sensed data. We discuss various techniques to design and maintain such a distributed index. We propose the use of bioinspired approaches to harvest the index. Finally, we address the issues of privacy of dissemination and of harvesting.