Exploiting social interactions using opportunistic networks

Social interaction has drastically evolved over time. Moving away from face-to-face based interactions, telephone networks made the first step towards remote social interaction. The internet, further enhanced with the tremendous increase in lightweight mobile devices, has taken social interaction to new frontiers. Users can already email, chat, call, and video conference with others from around the world without necessarily being attached to any fixed location. The final frontier has been to exploit this technology to completely virtualize social interaction via online social networking services such as facebook, orkut, MySpace, or LinkedIn, etc. These applications create a virtual world where users build social networks of their acquaintances and allow people belonging to these social networks or communities to freely interact regardless of the boundaries of time and location. At this point, we pose a simple question, is this truly the final frontier with respect to social interaction?

When people with similar interests or common acquaintances are a short distance from one another, like the same street, train, or mall, these people have no mechanism to identify this potential social interaction. Current research in geolocalization applications running on mobile devices provide some solutions to such problems, however, they face numerous challenges including network coverage, cost, and energy consumption concerns. We ultimately need context aware, adaptive, and agile solutions that can seamlessly extend peoples senses beyond their physical boundaries in order to exploit potentially rewarding social interactions.

Our work, targeted towards fulfilling this need, takes advantage of physical context merged with online social relationships to ultimately improve the physical social interaction experience of people. We will discuss how current research thrusts such as delay and disruption tolerant networks (DTNs) and mobile opportunistic networking, can exploit social relationships between people in order to efficiently disseminate messages through such challenged networks. We believe that these types of networks better model and reflect human mobility pattern and limitations, and so are more naturally suited as a platform for tackling the problems mentioned above.