Indo-Taiwan joint workshop “Digital Technologies for Societal Use”

Date: March 8 – 9, 2016

Organized by: Media Lab Asia, India & National Center for High-Performance Computing, Taiwan

Invited speakers from SNU: Prasad Avinash Pathak and Rahul Goel

**Title: Using digital technologies integrated with geographic information in exploring transportation systems within National Capital Region of Delhi (NCR)**

With rapid urbanization in India, we are facing challenges with respect to efficient transportation systems. Overloaded transportation systems in Delhi and peri-urban areas around it provide opportunities to study the impact of current transportation systems on environment so that better policies could be designed leading towards sustainable transportation.

We presented ongoing research at Shiv Nadar University where Greater Noida and Delhi are being studied. Greater Noida is being explored for connection between mode choices of transportation and planned land-use, using Geographic Information Systems, providing context relevant spatial information. We presented the preliminary findings and reasoning behind those findings. It was found that residential areas are completely segregated from potential destinations such as commercial zones, industrial sectors and employment places which compel residents of Greater Noida to use motorized vehicles. Lack of public transportation forces them to have personal vehicles.

While studying pollution aspect of transportation, we observed that pre-calibrated low-cost pollution sensors can be used for estimating population exposure in different travel modes as well as other microenvironments, as well as to map regional pollution in NCR. To map congestion as well as high speed points (or black spots) in urban areas, Google Map API-based real-time traffic speed can be used. This can be followed-up with retrofitting built-environment features to reduce safety hazards. Availability of such data is likely to significantly reduce resource-intensive efforts by transport departments and researchers around the world to solve speed-related traffic problems. For better understanding of travel pattern in the city and its dynamics over time, ticketing data from GPRS-based hand-held machines used in buses as well as from RFID-based cards used in metro stations is also being analyzed.