Communication Skills

Seminar Critique Review

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At the seminar held on 22nd November-2017, Dr. Francesc Alias introduced the topic of 'Audio Signal Processing for Dynamic Noise Mapping in Smart cities.' The seminar mainly highlighted the pivotal steps of audio signal processing along with the main challenges in their application for computing dynamic traffic noise maps in real-life environment.

The presenter commenced the seminar by explaining the fundamental concept of Sound. He classified the different sounds on the scale of decibels and their impacts on human life. He explained the mechanism of human ear. He diversified the discussion explaining comfort that human ear feels to the music of bird versus discomfort of sound experienced with respect to sound of a rushing train. The presenter further materialized the response of human ear to various sounds in technical terms and introduced the concept of 'Dynamic Acoustic Mapping (Dynamap)'.

It is apparently true that a single and sole sound is never guilty of causing noise. A combined collection of discomforting levels of various signals cause sound pollution. A Dyna-map thus illustrates the graphical information of levels of noise over the city. The Experts have historically collected various samples of the sound e.g. Braking of vehicles, rushing of trains, landing of planes, automobiles moving to and fro etc. These sounds are recorded individually and labelled to be stored digitally forming an audio database. The digital approach of storage demands the need of certified devices to measure and manage the statistics of bulk data. The instruments need to precise and accurate to distinguish between noise signal to prevent false data interpretation and alarming. Thus, advanced testing and calibration in instrumentation forms the basis of the noise mapping technology.

The Presenter manifested a real-life example of managing the Dynamics of Traffic in Cities. The use of Dynamap shall help the city authorities to keep track of all the roadways and routes to central areas in the cities which often face heavy commuter traffic. The illustrations of noise levels on the Dynamp help the authorities realize the severity of the gridlock and thus re-direct a portion of commuter population to other routes and thus, enhancing optimal use of available roadways. He also briefed regarding the present scenario of Noise-mapping Technology and work that has already been carried out.

Currently, the bottle neck roadways and lanes in Madrid and Rome have been installed with mics. These mics have gained success in implementing the technology. However, the installation of mics all over the city is intimidating and Big-Budget task. In addition to the heavy capital cost the maintenance and calibration of mics also account to large running cost. The Software for collection and integration of sounds need high acoustic advancement. On the other hand, it becomes difficult to manage and organize the bulk amount of large analog and raw data. These drawbacks lead to conflict in opinions on whether such a high budget project should be undertaken.

The presenter rejoiced the technicality behind the project stating diverse examples that supported his idea. He also indulged in various interactive discussions with the audience leading to impeccable understanding of Dynamap-Noise mapping. However, an excellent idea lacked structure and organization in presentation. The slides in the presentation consisted too much of text and the use of long sentences made the presentation dull and complicated. The use of images in presentation could have been a better alternative to keep the audience interested. The text in few slides were not clearly visible due to smaller font sizes leading to blunder in understanding data. Sometimes the images where too small compared to whole slide and those where improperly aligned

Thus, it can be concluded that Dynamap is an excellent notion that would cater future human needs in terms of attaining an advanced structure in daily life civilization. The advancement in technology would further pave way to reduction in cost for implementation of such projects.