



Thesis Topic

Bachelor/Master/Diploma Thesis
Studienarbeit/Diplomarbeit

Title: Improving ML-based QoS prediction with propagation studies in diverse environments

Problem Statement

The Radio Environment Maps (REM) are being envisioned for storing a multitude of information related to the propagation environment, the users' location, and available resources. However, majority of the current literature is assuming network nodes that either stationary or moving with slow speeds, which limits the performance. Motivated by this, in this thesis will evaluate based on real measurements important parameters of REMs, and their link to Quality of service (QoS) prediction and compare those to the available literature. The used dataset includes measurements of very high mobility (vehicular speeds > 100 km/h).

Tasks

- Fundamentals studies about the QoS prediction and its impact on the applications.
- Propagation studies in different environments for the QoS prediction.
- Investigate the space and time correlation in different radio environments and evaluation of its impact on QoS prediction.
- Creating a heatmap (to increase the number of sample) by interpolating the data
- using different interpolation techniques to generate the REM and evaluation of its impact on QoS prediction.

Expected Skills

- Interested students should have a background on data and statistical analysis or an interest to learn.
- At the end of the thesis the candidate would have developed exceptional skills in the area of working with real network data

Contact Person

Atul Kumar

atul.kumar@tu-dresden.de