Modelado de rendimiento de segmento en redes de acceso radio mediante aprendizaje supervisado

C. Gijón, M. Toril, S. Luna-Ramírez, J. L. Bejarano-Luque

{cgm@ic.uma.es, mtoril@ic.uma.es, sluna@ic.uma.es, jlbl@ic.uma.es}

Telecommunication Research Institute (TELMA), Universidad de Málaga, Málaga, España.

In 5G systems, the Network Slicing (NS) feature allows to deploy several logical networks customized for specific verticals over a common physical infrastructure. In the Radio Access Network (RAN), cellular operators need slice performance models for re-dimensioning purposes. In this work, we present a comprehensive analysis assessing the performance of Supervised Learning (SL) to estimate slice throughput in the down link of RAN-sliced networks, relying on information collected in the operations support system. Different SL algorithms are tested in two NS scenarios with single-service and multi-service slices, respectively. To this end, synthetic datasets with performance indicators and connection traces are generated with a systemlevel simulator emulating the activity of a sliced RAN in a live scenario. Results show that the best model (i.e., combination of SL algorithm and input features) may vary depending on the NS scenario. The best models have shown an error below 10 %.