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Machine learning in network management for improving QoE of RTC applications

ABSTRACT

With the spread of broadband Internet, Real-Time Communication (RTC) platforms have become increasingly popular and have transformed the way people communicate. Thus, it is fundamental that the network adopts traffic management policies that ensure appropriate Quality of Experience (QoE) to users of RTC applications. This requires a few steps at network level: identifying the RTP streams among other traffic, unveiling the type of content they carry (audio, video, screen sharing), distinguishing the applications behind them (Skype, Jitsi, Zoom) and possibly understanding the type of meeting going on to be able to prioritize certain speakers and assess the overall QoE. A comprehensive system that includes all these modules would allow for better visibility of RTC traffic and pave the way for proper traffic management that takes it into consideration.

In this talk I will present the ML4QoE project between Politecnico di Torino and Cisco Systems that strives towards improving the QoE of RTC traffic, giving a general overview of the activities and then focusing on the architecture and experimental results obtained for one of the modules mentioned above.

BIOGRAPHY

Dena is a PhD student in Electrical, Electronics and Communications Engineering at Politecnico di Torino, Italy and member of the SmartData@Polito research center. Her research focuses on Data science applied to Computer Networking – traffic analysis and application of Machine learning algorithms for better Network management. She obtained her Bachelor degree in Telecommunications at “Ss. Cyril and Methodius” University in Skopje, North Macedonia in 2016 and her Master’s degree in ICT for Smart Societies at Politecnico di Torino in 2018.