Network Flow Data Re-collecting Approach Using 5G Testbed for Labeled Dataset

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***Abstract*—With the emergence of fifth generation technology (5G) environments, intelligent network security against constantly evolving attacks related to massive Internet of Things devices, user equipment, and various edge services has become more important. Moreover, to employ state-of-the-art learning-based detection methodologies, a labeled dataset is essential. However, it is not easy to obtain such a dataset by collecting the real communication dataset for a 5G network. Hence, in this study, we build a purpose-built 5G testbed that can observe 5G network features by replaying the collected data. Additionally, we implement a specialized network collector system that can 5G edge network. Subsequently, the network traffic data collected in the configured 5G testbed are analyzed. It is discovered that a re-collecting methodology using the proposed 5G testbed and network collector can be sufficiently utilized to construct a 5G-based labeled dataset for supervised learning methods.**

***Keyword*—5G, GTP, Network Collector, Testbed, AI Dataset**

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