Security architectures for network slice management for 5G and beyond

Une architecture sécurisée pour les tranches réseaux dans la 5G

Mots clés : Array

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Résumé du projet de recherche (Langue 1)

Network Slicing and Multi-access Edge Computing, enabled by technologies such as Network Functions Virtualization (NFV) and Software-Defined Networking (SDN), are two of the main pillars of 5G technology. In beyond 5G settings, the number of coexisting slices with varying degrees of complexity and very diverse lifespans, resource requirements, and performance targets is expected to explode. This creates significant challenges towards zero-touch slice management and orchestration; including security, fault management, and trust. Indeed, new forms of slicing-related attacks need to be identified in real-time via AI-driven schemes, and the dynamic instantiation and appropriate configuration of security appliances in an “as-a-service” manner should be put in effect. In this thesis, we will devise a new security architecture tailored to Network Slicing ready networks (5G and beyond), heavily relying on AI to detect and mitigate attacks and threats.