

Modelling and Design of the Resilient and Survivable Future Internet under Challenges

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Abstract:

Communication networks, in particular the Internet, face a variety of challenges that can disrupt our daily lives resulting in human life and financial losses in the worst cases. We define challenges as external events that trigger faults that eventually result in service failures. Understanding these challenges accordingly is essential for improvement of the current networks and for designing Future Internet architectures. We surveyed a wide spectrum of challenges and categorized them. Next, we studied challenges and their impacts on physical and logical network topologies. Our initial results show that different layers of networks demonstrate varying performance and it is crucial to model and study challenges accordingly. Ultimately, we aim to design topologies that are resilient to communication network challenges.