Optimization of Information-Centric Networks and the design of future Internet architectures

Résumé du projet de recherche (Langue 1)

Information-Centric Networking is an approach for the future Internet architecture that deals with the explosion of the supply and demand for content in the Internet [1]. ICNs is positioned as a current host-centric communication model toward a content-centric model for effective distribution of content over the network. It is a hotly debated topic since its introduction by Van Jacobson in 2009. The principal ideas in ICNs are: 1) Content is located by name instead of by location. 2) Every ICN node can cache and serve the requested content. There exists two CCN packet types, Interest and Data packet. When a consumer asks for content by broadcasting its interest, any node hearing the interest and having data that matches the request, can respond with a Data packet. Data is transmitted only in response to an interest and consumes that interest [2]. This networking paradigm has generated much interest in the research community in recent years due to its potential for providing a high-performance and low-cost network for content distribution [3, 5].

Résumé du projet de recherche (Langue 2)

In the thesis project, we will extend our previous work on congestion control and economic model grounded on CCN. We will review and discuss related research works then propose the effective solutions to address this problem, evaluate the performance and approximate algorithms through extensive numerical simulations and real case studies.