

A Survey on Information-Centric Networking with Cloud Internet of Things and Artificial Intelligence

ABSTRACT

The Internet is evolving, and data is a critical component of today's Internet. People are more interested in data than data location. An information-centric network (ICN) uses this idea and makes data, instead of host addresses, an integral component. Another essential topic in the contemporary period is cloud or edge computing, as well as the Internet of Things (IoT) and Artificial Intelligence (AI), which becomes even more critical when combined with ICN. We initially rate the configuration of ICN with cloud or edge IoT and AI (ICN-CIoT-AI) in this study so that readers may learn about the latest trends and merging of ICN-CIoT-AI. As data rates rise and the Internet becomes a requirement for any technology, we require IoT settings in which data can be cached locally, which is possible when ICN collaborates with cloud or edge computing. To make this arrangement more intelligent, we require AI, and machine learning algorithms can help to overcome many obstacles. In this paper, we first discuss ICN, its deployment, and its unique features that distinguish it from its archrival TCP/IP. We then present the most recent research on ICN-CIoT-AI and provide a comprehensive analysis of this domain in terms of technology, AI/ML domain, IoT, and cloud technology. The study framework, simulation software, and results achieved by the researchers are also listed. Finally, we explore three broad categories of open issues and challenges raised by the researchers: security, performance, and in-network caching. We also exhibit the technologies that were employed in the study.