Network security for data mining

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Network security has become more important to personal computer users, organizations, and the military. With the advent of the internet, security became a major concern and the history of security allows a better understanding of the emergence of security technology. The internet structure itself allowed for many security threats to occur. The architecture of the internet, when modified can reduce the possible attacks that can be sent across the network. Knowing the attack methods, allows for the appropriate security to emerge. Many businesses secure themselves from the internet by means of firewalls and encryption mechanisms. The businesses create an “intranet” to remain connected to the internet but secured from possible threats. The entire field of network security is vast and in an evolutionary stage. The range of study encompasses a brief history dating back to internet's beginnings and the current development in network security. In order to understand the research being performed today, background knowledge of the internet, its vulnerabilities, attack methods through the internet, and security technology is important and therefore they are reviewed. The world is becoming more interconnected with the advent of the internet and new networking technology. There is a large amount of personal, commercial, military, and government information on networking infrastructures worldwide. Network security is becoming of great importance because of intellectual property that can be easily acquired through the internet. There are currently two fundamentally different networks, data networks and synchronous network comprised of switches. The internet is considered a data network. Since the current data network consists of computer-based routers, information can be obtained by special programs, such as “Trojan horses,” planted in the routers. The synchronous network that consists of switches does not buffer data and therefore are not threatened by attackers. That is why security is emphasized in data networks, such as the internet, and other networks that link to the internet. The vast topic of network security is analyzed by researching the following:

1. History of security in networks
2. Internet architecture and vulnerable security aspects of the Internet
3. Types of internet attacks and security methods
4. Security for networks with internet access
5. Current development in network security

Hardware and software based on this research, the future of network security is forecasted. New trends that are emerging will also be considered to understand where network security is heading.

Biography
Rajesh Dubey is the Dean of Faculty of Engineering at Swami Vivekanand University, India.

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