TREO
Technology, Research, Education, Opinion

An Exploratory Analysis of Healthcare Data Breaches

Shilpa Balan
California State University-Los Angeles
College of Business and Economics
sbalan@calstatela.edu

Joseph Otto
California State University-Los Angeles
College of Business and Economics
jotto@calstatela.edu

Siddhi Udani
California State University-Los Angeles
College of Business and Economics
sudani2@calstatela.edu

Maitri Shah
California State University-Los Angeles
College of Business and Economics
mshah3@calstatela.edu

Abstract

The healthcare industry is facing a new type of hazard recently, i.e. primarily, hospitals and many other healthcare facilities are facing cyberattacks. In particular, healthcare is an industry that is vulnerable to cyberattacks as its providers depend on up-to-date information from electronic health data from many different sources.

Breaches are widely observed in the healthcare sector and can be caused by many different types of incidents, including credential stealing malware, an insider who either purposefully or accidentally discloses patient data, or lost laptops or other devices. As a result, the healthcare industry is witnessing an increase in the volume of vulnerable data. As healthcare experts look for every possible way to lower costs while improving the care process, big data emerges as a plausible solution with the promise to transform the healthcare industry. This paradigm shift can result in an overall decrease in healthcare costs while at the same time increasing the quality of healthcare. While the healthcare industry harnesses the power of big data, security and privacy issues are at the focal point as emerging threats and vulnerabilities continue to grow. In this presentation, we present the state-of-the-art security and privacy issues in big data as applied to the healthcare industry.

Using Tableau, we analyzed some datasets containing information on data breaches that are a threat to the organizations. These datasets primarily contain information on the type of breach, location of breach, risk score, records breached and date of breach. From our analysis, we found that identity theft was a breach type with most occurrence in the healthcare industry in the United States. This is followed by other breach types such as 'financial access' and 'account accesses'.

Regardless of electronic health records, bills, or other secure data, one must ensure that the data has restricted access and remains safe under standard authoritative processes. Our study shows that as of 2018, there are still several individuals that are being affected by healthcare data breaches. For future research, further study can be made based on geographical locations and organization size.