Chapter 5
Nation–State Cyber Attacks on Critical Infrastructure:
A Case Study and Analysis of the 2014 Sony Pictures Hack by North Korea

Ngozi Tracy Aleke

https://orcid.org/0009-0005-2328-5680

Illinois Institute of Technology, USA

Ivan Livingstone Zziwa

Illinois Institute of Technology, USA

Kwame Opoku-Appiah

Illinois Institute of Technology, USA

ABSTRACT

In the 21st century, there has been a great deal of importance ascribed to international security. A standard procedure used by adversarial states and non-state actors to propagate their continuous and calculated malicious objectives are cyber offenses such as cyber-espionage, hacktivism, cyberwar, as well as other cybercriminal activities (Hwang & Choi, 2021). Even though cyber-attacks were initially thought to be perpetrated by individuals or privately owned organizations, more and more attacks are being orchestrated by nation states, other states or even targeted towards individual organizations. Recent reports have shown that North Korea has an advance cyber warfare capacity, and a substantial number of its workforce is allegedly

OVERVIEW OF NATION-STATE SPONSORED CYBERATTACKS

In the 21ˢᵗ century, there has been a great deal of importance ascribed to international security. A standard procedure used by adversarial states and non-state actors to propagate their continuous and calculated malicious objectives are cyber offenses such as cyber-espionage, hacktivism, cyberwar, as well as other cyber-criminal activities (Hwang & Choi, 2021). Even though cyber-attacks were initially thought to be perpetrated by individuals or privately owned organizations, more and more attacks are being orchestrated by nation states, other states or even targeted towards individual organizations. Recent reports have shown that North Korea has an advance cyber warfare capacity, and a substantial number of its workforce is allegedly engaged in the activities of the dark web with a direct support from the government (Kshetri, 2014).

Even though the general population in North Korea has limited access to advanced internet infrastructure, the nation has developed a highly skilled cyber arsenal that it has use to carry out cyberattacks on other nations (Hwang & Choi, 2021). For example, in 2009, North Korean hackers, using servers in Austria, Germany, Georgia, and the U.S., lunched an attack in South Korea, shutting down computers in the nation's presidential palace at Seoul for days. Also on July 4, 2009, North Korea also targeted U.S. government servers, including the Treasury Department and the Secret Service. Similarly Distributed Denial of Service (DDoS) attacks in 2011 affected South Korean government and bank websites. In 2012, a traditional South Korean newspaper outlet, JoongAng Daily, was hacked. A series of cyberattacks followed on March 20, 2013, when North Korea launched malware attacks on South Korean banks and broadcast stations, deactivating 48,000 computers and disabling networks within the organizations. Despite this, North Korea denied involvement and attempted to hide their digital footprint. In March 2013, North Korean hackers also targeted ATMs in Seoul, using malware called Dark Seoul, which was designed to bypass antivirus software. Similar attacks were reported against South Korea's presidential palace, military websites, and U.S. institutions like the Treasury Department and the Federal Trade Commission (Hwang & Choi, 2021).

Related Content

An Artificial Intelligence-Based Vehicular System Simulator

Marvin T. Chan, Jonathan T. Chan, Christine Chanand Craig Gelowitz (2020). *Natural Language Processing: Concepts, Methodologies, Tools, and Applications (pp. 708-721).*

www.irma-international.org/chapter/an-artificial-intelligence-based-vehicular-system-simulator/239961

Classification of Mental Emotions by NLP

Ravindra Changal, Arpit Jain, Renu Vijand Bramah Hazela (2025). *Demystifying the Role of Natural Language Processing (NLP) in Mental Health (pp. 23-36).*

www.irma-international.org/chapter/classification-of-mental-emotions-by-nlp/372430

Phoenix Precision Algorithm for Blind People With Enhanced Voice Assistant

Judy Flavia B., S. Sridevi, V. Srivathsan, Aravindak Kumar R. K., Ashwin Kumar M. K., S. Rubin Boseand R. Regin (2024). *Advanced Applications of Generative AI and Natural Language Processing Models (pp. 340-357).*

www.irma-international.org/chapter/phoenix-precision-algorithm-for-blind-people-with-enhanced-voice-assistant/335845

Automatic Image Captioning Using Different Variants of the Long Short-Term Memory (LSTM) Deep Learning Model

Ritwik Kundu, Shaurya Singh, Geraldine Amali, Mathew Mithra Noeland Umadevi K. S. (2023). *Deep Learning Research Applications for Natural Language Processing (pp. 132-155).*

www.irma-international.org/chapter/automatic-image-captioning-using-different-variants-of-the-long-short-term-memory-lstm-deep-learning-model/314139

Patient Data De-Identification: A Conditional Random-Field-Based Supervised Approach

Shweta Yadav, Asif Ekbal, Sriparna Saha, Parth S. Pathakand Pushpak Bhattacharyya (2020). *Natural Language Processing: Concepts, Methodologies, Tools, and Applications (pp. 991-1010).*

www.irma-international.org/chapter/patient-data-de-identification/239976