

## **Chapter 10**

275

# **Data Mining Techniques for Distributed Denial of Service Attacks Detection in the Internet of Things: A Research Survey**

**Pheeha Machaka**

Decision Sciences Department, University of South Africa, South Africa

**Fulufhelo Nelwamondo**

Modelling and Digital Science, Council for Scientific and Industrial Research,  
South Africa

### **Abstract**

This chapter reviews the evolution of the traditional internet into the Internet of Things (IoT). The characteristics and application of the IoT are also reviewed, together with its security concerns in terms of distributed denial of service attacks. The chapter further investigates the state-of-the-art in data mining techniques for Distributed Denial of Service (DDoS) attacks targeting the various infrastructures. The chapter explores the characteristics and pervasiveness of DDoS attacks. It also explores the motives, mechanisms and techniques used to execute a DDoS attack. The chapter further investigates the current data mining techniques that are used to combat and detect these attacks, their advantages and disadvantages are explored. Future direction of the research is also provided.