EuroSciCon

Euroscicon Conference on

3D Printing and Wireless Technology

September 17-18, 2018
Lisbon, Portugal

Am J Compt Sci Inform Technol 2018 Volume: 6
DOI: 10.21767/2349-3917-C2-006

# HOW TO DEAL WITH SECURITY HAZARDS IN IOT? A SELF-ADAPTIVE SOLUTION TO IOT APPLICATIONS

**Mehran Alidoost Nia**
University of Tehran, Iran

Internet of things (IoT) has many applications in different industrial and automated systems. Considering the ubiquitous nature of the IoT, it is hard to deal with all possible security threats. However, the industrial IoT can resist against external attacks if its components would be self-adaptive. A self-adaptive system (SAS) is able to adjust its behaviour in response to the environmental changes. It employs different strategies in response to different situations. So, we can refer to self-adaptive systems as self-healing ones. As the IoT has been distributed along with the Internet, an intruder tries its best to execute a set of distributed attacks like distributed denial of service (DDoS). If the industrial IoT is equipped with self-adaptive components, it would be hard to undermine the main functionalities of the system using a distributed attack. In this situation, the systems will respond to the threat by a proper adaptation tactic. Each tactic is a component-based strategy that is designed to deal with a specific external threat. In this paper, we are going to propose a self-adaptive model for industrial IoT that is able to adaptively resist against different cyberattack scenarios. It means that the system can proactively react to cyber threats and decide which strategy is the best at the same time. According to that decision, the system deals with the same threat. We argue that by deploying self-adaptive components in industrial IoT, the security features of the system will be improved. To the best of our knowledge, this is the first research that aims to enhance the security level of an industrial IoT using self-adaptive component. We are going to show the validity of our argument by a series of experiments and security analyses.

alidoostnia@ut.ac.ir