Abstract

Medical cyber physical systems (MCPS) are getting popular now a days. Every advanced healthcare hospitals use the help of MCPS to ease otherwise complicated tasks. These systems analyze the patient status using physical sensors and employ corresponding reaction using actuators. An array of sensor devices are attached to the patient which reads real time data and analyses it. Actuators provide corresponding action with respect to the values sensed. Nowadays these cyber physical systems (CPS) are used as tool for cyber attacks. This can relatively harm the patient or may even cause a direct or indirect threat to life. Since the CPS work based on sophisticated and more complex algorithms, intrusion detection in such system can be really complicated task. Since this area is developing in a peak rate, new attacks are being modeled and deployed. Here, intrusion detection system uses behavioral rule specification which is efficient enough to detect unknown attack/attacker patterns. The methodology is to transform behavior rules to corresponding state machines so that the Intrusion detection system can analyze whether its moving towards a safe state (normal behavior) or an unsafe state (deviation from its normal behavior) that compromises the security
of the system. This technique also uses a peer to peer approach in which each nodes monitor its neighboring nodes so that to reduce the chance of failure.

References


Index Terms

Computer Science
Biomedical

Keywords
Intrusion detection, sensor, actuator, medical cyber physical systems, healthcare, safety, security