

IoTES (A Machine learning model) - Design dependant encryption selection for IoT devices

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Abstract— The data collected by IoT devices has a tremendous impact on today's world. Not only does it increase one's awareness about his surroundings, but it also enables the businesses to provide a variety of lucrative and personalized services for each end user. The use of IoT technology can combat variety of current as well as future issues which can arise because of urbanization. The expansion of IoT technology requires trust from the end user. However, IoT devices are vulnerable to cyber threats due to storing majority of it's collected data in third-party databases. The end users would never like to compromise their confidential data as a result of using this technology. If these devices can ensure user data privacy, then it will increase the end user's confidence and hence lead to a greater adoption of IoT technology. Encryption of IoT data within the device itself builds user trust and eliminates the fear of storing IoT data in a third-party database. The designers of this technology face considerable difficulties in selecting an appropriate encryption technique for the IoT device due to several reasons among which IoT's resource constrained nature is worth mentioning. This paper presents a model developed by using machine learning to assist IoT device designers in selecting an appropriate encryption for their devices.

Index Terms— *IoT, System Security, IoT Device Security, Cryptography, Machine Learning, System Design.*



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