Collaborative Discussion 1 →

The Internet of Things (IoT) refers to a vast network of interconnected devices that are enabled to collect, exchange, and act on data over the internet (IBM 2024). These devices range from simple sensors to complex software systems, all communicating with each other to create a cohesive and interactive environment. By integrating physical objects with the digital world, IoT transforms how we interact with our surroundings, leading to smarter and more efficient systems.

One of the primary benefits of IoT is its ability to leverage big data for significant advantages. By collecting large amounts of data from various sources, IoT devices can analyse and derive valuable insights, facilitating improved decision-making processes. This capacity for data-driven insights leads to enhanced efficiency and automation. Through the use of Application Programming Interfaces (APIs), IoT systems can seamlessly integrate and automate tasks, providing immense convenience to both businesses and consumers. For instance, smart home devices can automate lighting and temperature controls, while industrial IoT can streamline manufacturing processes, reducing waste, and improving productivity.

However, the widespread adoption of IoT also brings about significant risks, particularly concerning security and data privacy. The constant exchange of data over the internet makes IoT devices prime targets for cyberattacks (Abomhara et Køien 2015). The misuse and theft of personal data have become critical issues, with incidents of data breaches occurring daily. These security vulnerabilities can lead to unauthorised access to sensitive information, posing threats to individuals and organizations alike. Consequently, addressing these risks is crucial to ensure the safe and reliable implementation of IoT technologies, necessitating robust security measures and stringent data protection policies.

References -

IBM (2024), What is the Internet of Things (IoT)? Available at: https://www.ibm.com/topics/internet-of-things#:~:text=The%20Internet%20of%20Things%20(IoT)%20refers%20to%20a%20network%20of,to%20collect%20and%20share%20data. [Accessed: 3rd June 2024].

Abomhara, M. and Køien, G.M. (2015) Cyber security and the internet of things: Vulnerabilities, threats, intruders and attacks. J. Cyber Secur. Mobil., 4(1), pp.65-88.