

Review of Internet of Things security protocols – A Bibliometric Analysis

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Abstract—The upsurge of the fourth industrial revolution brings about an emergence of cloud-based technologies such as the Internet of Things (IoT). By design, these devices and systems are bound to operate in complex environments that require secure assurances at the same time the need for mechanisms to achieve resilience in an event of threats or attacks. Little attention has been paid to finding evidence about security protocols designed to support IoT devices from cyber-attacks. To accomplish this, however, would necessitate a literature review study on current trends, concerns, and ongoing research in the field of Internet of Things security protocols. This is the void that this paper aims to fill through a bibliometric analysis of scientific paper publications. Hence, this paper presents a review study that assesses the status of the existing research relating to Internet of Things security protocols. A bibliometric analysis was carried out using R Studio on scientific publications in the field of Internet of Things security protocols for the period between 2016 and 2022 retrieved from Web of Science and Scopus databases. The results from the bibliometric analysis showed that there is active research going on in Internet of Things security protocols and is dominated by the American and Asian continents in terms of research paper publications and the collaboration network while Africa is still lacking behind. Based on these review results, this study has established that research in the field of Internet of Things security protocols is still in its infancy in the African continent compared to other continents. In addition, more work is needed in securing Internet of Things systems through continued protocol development including standardised guidelines so as advance more resilience in securing the operations of the devices

Keyword— Security Protocols, Internet of Things, Cloud-based technologies, Cybersecurity, Bibliometric analysis.



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