Lightweight Digital Trust Architectures in the Internet of Medical Things (IoMT)

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In the field of healthcare technology, the Internet of Medical Things (IoMT) stands at the forefront of progress, revolutionizing patient care through advanced monitoring and treatment modalities. However, this digital transformation brings forth a new challenge— the vulnerability of sensitive medical data to cyber threats. **Lightweight Digital Trust Architectures in the Internet of Medical Things (IoMT)** examines ways to fortify IoMT against potential breaches through the exploration of these trust architectures.

Delving deep into data privacy technologies, the book examines the implications of regulatory frameworks such as GDPR, HIPAA, and cybersecurity law. It assesses traditional security methods and considers innovative approaches, offering insights into certificate generation, digital identification, and the optimization of network protocols for secure data transmission.**Lightweight Digital Trust Architectures in the Internet of Medical Things (IoMT)** illuminates the path forward for IoMT security. Its objectives are multi-faceted: from unraveling the intricacies of the health chain to dissecting the role of lightweight cryptographic key agreement mechanisms in safeguarding medical data. The book grapples with the challenges and advantages of implementing compact cryptographic techniques in healthcare, particularly within the decentralized framework of IoMT. By exploring the potential of Federated Learning (FL) in bolstering privacy and improving healthcare outcomes, the book aims to equip researchers, healthcare professionals, and IT experts with valuable knowledge. Through real-world case studies, it endeavors to pave the way for a future where security and efficiency seamlessly integrate in IoMT.

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ABSTRACT

This chapter extensively delves into the realm of digital image watermarking, encompassing comparisons with analogous information security methodologies, elucidations of watermark embedding and extraction procedures, discussions on watermark attributes and applications, overviews of prevalent watermarking tactics, and a concise recapitulation of secure watermarking approaches. The primary focus of this discourse lies in advanced strategies for shielding healthcare data using digital watermarking techniques, with special emphasis on the integration of discrete wavelet transform (DWT), discrete cosine transform (DCT), and singular value decomposition (SVD). Recognizing the inherent challenges in safeguarding medical data amidst the dynamic healthcare landscape, the investigation explores multifaceted watermarking algorithms. Leveraging foundational principles from DWT, DCT, and SVD, the study amalgamates prior research and provides comparative evaluations of the efficacy of these methodologies through tabular representations.

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