EVOLUTION OF COMPUTER HARDWARE FOR AGRICULTURAL SECURITY

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Abstract

The article looks at the challenges and solutions for data privacy in agriculture. The use of advanced technologies in agriculture, such as sensors, IoT, data analytics, and AI, has brought several benefits to the industry. However, protecting sensitive data is a significant challenge in using these technologies, especially in the agricultural sector, where personal and business data, such as agricultural production and financial and customer information, can be vulnerable to theft or misuse. The article discusses solutions for data protection in agriculture, including data encryption, zero-knowledge proofs, decentralized identities, multi-party computing, and homomorphic encryption. The article also highlights the importance of compliance with GDPR and other data protection regulations. Protecting sensitive data in agriculture is essential as modern farming relies heavily on technology for decision-making and management. This paper proposes an ideal approach to secure data by deploying advanced weather-resistant computing systems designed to operate under harsh conditions while employing sophisticated cryptographic techniques. Although constrained by current technological limitations, the ideal implementation of these systems offers numerous advantages, such as improved data protection, enhanced data availability, facilitation of collaborative farming practices, and potential integration with IoT devices. Further research and development in this area could lead to significant advancements in agricultural technology and data security, making the proposed solution a model for future efforts.

Key words: IoT, data privacy, data protection, GDPR (General Data Protection Regulation).