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Opportunities of Employing Advanced Technologies (Artificial Intelligence, Internet of Things, Cloud Computing) for Serving Food Engineering Technology

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Abstract: *Recent advancements in technologies like Artificial Intelligence (AI), the Internet of Things (IoT), and Cloud Computing (CC) have captured the attention of the research community, particularly in their applications across various domains. Food engineering technologies play a crucial role in our daily lives by ensuring that food is healthy and safe for consumption, thereby protecting public health. The integration of AI, IoT, and CC with food engineering technology fosters the development of advanced systems that enhance the speed and accuracy of monitoring food freshness and quality. This integration helps mitigate serious health risks and protects the reputation of food companies. This study examines the potential of leveraging advanced technologies (AI, Deep Learning, IoT, and CC) to benefit food engineering. It outlines the general architecture of each technology and integrates them into a cohesive framework. This adaptable framework can serve multiple purposes within food engineering, including monitoring food quality, assessing freshness, implementing smart packaging, and detecting bacterial contamination. Moreover, the research highlights the existence of numerous online data repositories that can be utilized to develop sophisticated systems based on the integrated framework. By employing this framework, data for training intelligent systems can be accessed and managed through cloud computing, allowing for local or remote training based on required security and privacy standards. Finally, IoT infrastructure is utilized to gather sensory data, enabling real-time predictions.*

Keywords: Intelligent System, Framework, IoT Sensor Data, Storage, Gas-Based Signature

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