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TITLE: Revolutionizing Food Safety: Electronic Noses and AI in Quality Control

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ABSTRACT (upto 300 words)

Food quality control is vital for ensuring food safety and building trust within the food industry. The development of simple, on-line sensors provides a revolutionary tool, facilitating easy and effective detection of contamination and spoilage throughout the supply chain. This technology holds immense potential to safeguard public health, reduce food waste, and ensure consumer access to high-quality food. The technology of Electronic Noses, combined with artificial intelligence, can be applied to identify bacteria in food or detect spoiled food quickly through the recognition of patterns of Volatile Organic Compounds (VOCs). Electronic Noses, equipped with gas sensors and AI algorithms, can detect the unique "smell fingerprints" associated with different compounds released by bacteria or spoiled food. These devices analyze the VOCs, and the reading values are processed and classified by the AI model to identify specific patterns associated with bacterial contamination or food spoilage. This technology has been applied in various domains, including food safety and quality assessment, to quickly and accurately detect the presence of harmful bacteria or spoiled food.

BIOGRAPHY (upto 200 words)

Professor at the Center of Informatics (CIn) at the Federal University of Pernambuco (UFPE). Holds a Master's and Ph.D. in Computer Science, with a focus on Artificial Intelligence. Guides master's and doctoral students in Computer Science in conducting research on Data Mining, Machine Learning, Pattern Recognition, Artificial Neural Networks, and Evolutionary Computing. Member of the Brazilian Computing Society (SBC). Develops research projects with the Oil and Natural Gas industry, Fiber Manufacturing, and the Food industry such as seafood to create intelligent solutions.

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