Oleum

The Power of
Artificial Intelligence
in the Food Industry

Alianza Team®

New possibilities
for the food industry

The development of AI-based technologies is making its way into the food industry, accelerating the creation of value-added propositions and fostering the innovation of products. This is made possible through the exploration of ingredient combinations, optimizations in formulations that positively impact the nutritional profiles and organoleptic characteristics of products, as well as alternatives that contribute to improving production times and minimizing waste[1].

The incorporation of AI into the processes of innovation, development, and food creation allows companies to stay aligned with current and future industry trends, catering to consumer needs and adapting to changes in global markets. These novel approaches also benefit producers by providing personalized solutions with a greater impact[2]. Thus, AI tools emerge as significant allies, effectively enhancing various areas of the industry.

**The Alianza Team's research and development team has developed Oleum, a suite of three Artificial Intelligence tools that streamline the time and processes involved in formulating various products such as margarines, shortenings, and emulgels. Explore them on **

Artificial Intelligence
in the Food Industry

Benefits of incorporating AI
in the food industry

Agility in Decision Making

AI algorithms can analyze vast amounts of data on nutrient composition and sensory characteristics to create innovative products in record time[3].

Flexible and Efficient Production

AI tools enable cost efficiency and predictive capabilities[4], allowing for the customization of products to meet specific industry needs[5].

Contribution to Sustainability

AI tools could help produce more food by offering new formulation alternatives[6]. The implementation of AI in the food industry could also lead to significant time and cost savings for producers[7].

Waste Reduction

This is possible because AI can reduce the number of formulations, automate processes, and minimize errors in developing a new product[8].

New developments from
Alianza Team

Oleum

The company, with over 75 years of experience in developing tailor-made solutions in lipids, fats, and oils for the food industry, has introduced Oleum, a suite of Artificial Intelligence tools designed to streamline the formulation process for multiple products. This latest generation of AI tools bolsters the solutions crafted by Alianza Team, upholding high standards of quality and sustainability for the industry's benefit.

Jul-ia

Jul-iA is an AI designed to uncover the intricate relationship between triglycerides and the fatty acids that constitute them with the physical characteristics of fats and oils. Through this tool, it's possible to design margarines and shortenings, incorporate new ingredients into the formulation of these products, and provide alternatives for the industry.

Anthon/e

Anthon/e is a quantum computing-based system that potentially reduces errors and minimizes prediction times for new fat and oil blends. This research project, in its validation stage, could enable the rapid design of lipid-based products as well as precise prediction of the physical parameters of the products.

James.ify

James.ify is a computer-aided design system for obtaining formulations of gelled emulsions that could mimic the functional rheological characteristics of shortenings and margarines with lower levels of saturated fats and calories. This AI stands out for providing optimal blend designs that would help preserve the functionality and sensory characteristics of the fatty bases.

> **Companies interested in testing these new artificial intelligence tools can reach out to Alianza Team' R&D team here.**

Foods created with AI
Alianza Team's capabilities

AI Margarine

The first bar margarine designed by Juli–iA. In this process, the AI selected an optimal combination of different fatty bases and predicted their physical properties to mimic those of a market bar.

Quantum Margarine

Anthon/e facilitated the formulation of a new margarine in just a few seconds. Utilizing quantum computers, Alianza Team implemented their own algorithms for optimizing the fat blend of this margarine.

Liquid Margarine

To address the need for liquid margarines, Alianza Team utilized James.ify. In this application, the AI provided a design for an emulgel that mimics the rheology and sensory properties of market liquid margarines.

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