iFoodDS®

AI in Food Safety

WSAS Growing with AI Webinar Series

Claire Zoellner | 02-19-2026

1. FOOD SAFETY TRANSFORMATION BRINGS AI-READINESS

2004

iDecisionSciences (iDS)

a Seattle-based consulting agency serving the fresh produce industry

2013

iFoodDecisionSciences, Inc.

software provider managing data requirements of food safety programs

2020

iFoodDS

supply chain platform for **safety**, **traceability**, and **quality management**

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FDA FOOD SAFETY MODERNIZATION ACT

Healthy People 2020

2020

iFoodDS

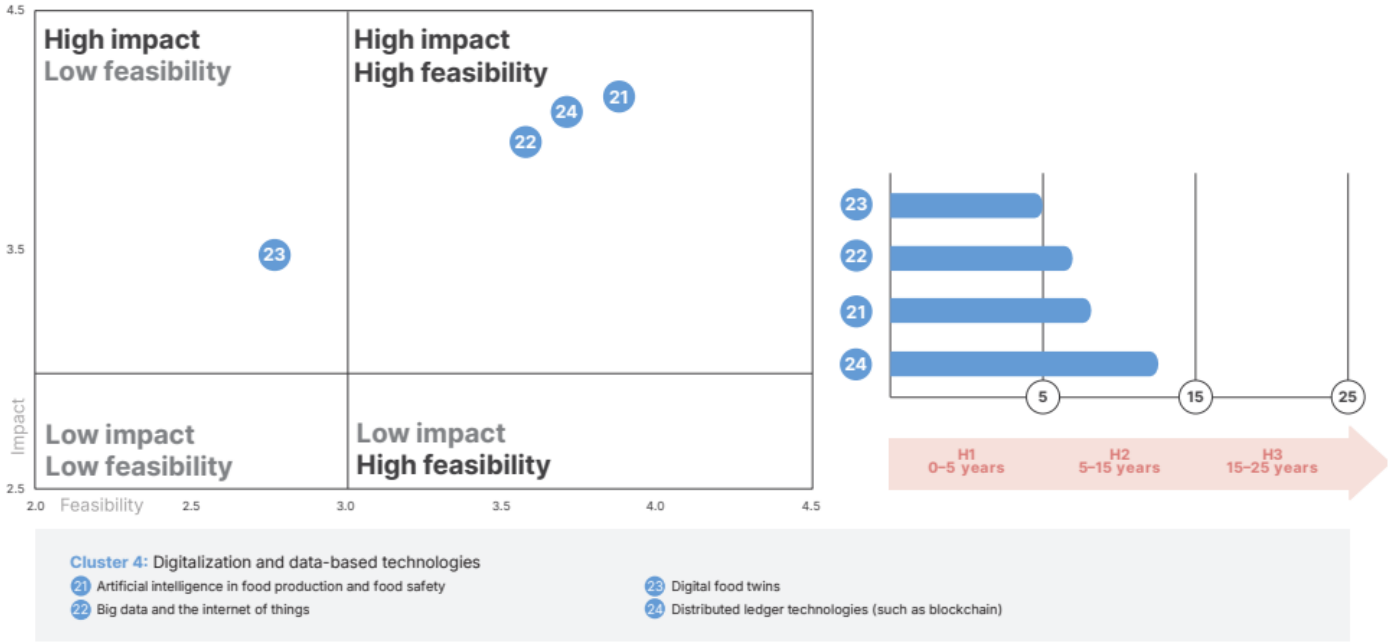
supply chain platform for **safety**, **traceability**, and **quality management**

NEW ERA OF SMARTER FOOD SAFETY
FDA's Blueprint for the Future

Healthy People 2030

2. FOOD SAFETY STILL “GROWING WITH AI”

*FAO food safety experts say AI is still **5+ yrs away** from widespread adoption and realizing impact*



Mukherjee, et. al., 2025 (Figure 9)

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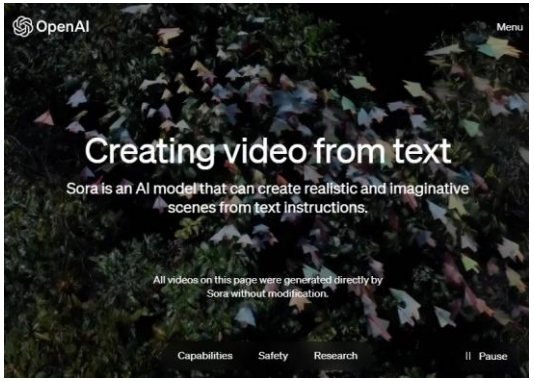
2. “GROWING WITH AI”: REFINE RISK COMMUNICATION

Intent: *Using chatbots and Augmented Reality for upskilling and training on continuous improvement*

- Translate or simplify complex topics and large amounts of information
  - Practice messaging for difficult conversations
  - Writing food safety plans
  - Identifying relevant regulatory requirements
- Visualize microbial and chemical contamination sources and transmission routes



Augmented reality training (NSF EyeSucceed pwrd by TeamViewer)

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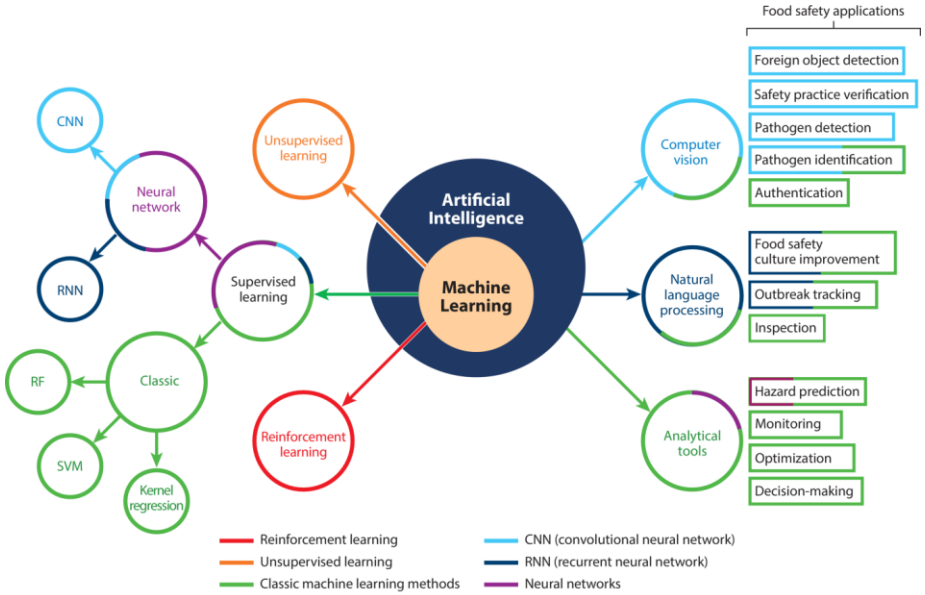
2. “GROWING WITH AI”: FACILITATE RISK ASSESSMENT

Intent: *Combining microbial data with IoT, computer vision, and/or AI/ML to detect and interpret new risks*

- Shift from traditional batch testing to continuous and automated sampling
  - Data-driven, non-destructive technologies
- Improve environmental context of microbial data; forecast contamination events
  - Real-time monitoring of environment and SOP compliance in facilities
- Ensuring food integrity and traceability with data capture, semantic search, and sharing

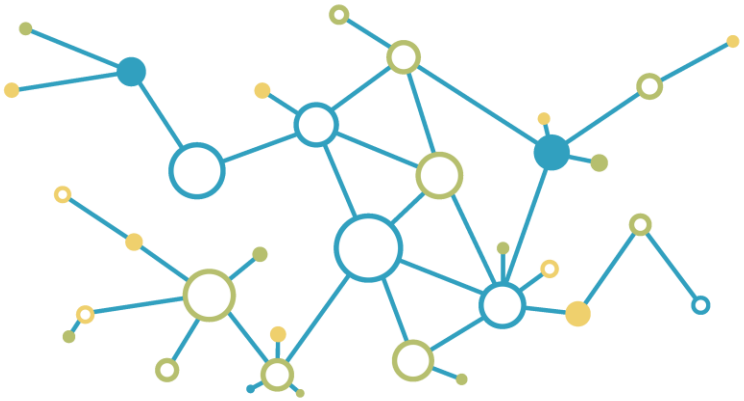


Qian C, et al. 2023; Ma et. al. 2022

2. “GROWING WITH AI”: ENABLE RISK MANAGEMENT

Intent: *Supporting and automating decision-making with predictive analytics and/or simulation*

- Automate information analysis and recommend actions
  - FDA PREDICT (Predictive Risk-based Evaluation for Dynamic Import Compliance Targeting)
  - FDA Product Tracing System



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3. OPPORTUNITIES FOR COORDINATION

1

ADOPT DATA STANDARDS

- Define standards where needed or adopt existing ones
- Monitor data quality

2

THE RIGHT USE CASES

- Pilots with relevant use cases that scale
- Include regulatory and legal
- Share examples of success and short-comings

3

AVAILABILITY OF TRAINING DATA

- Use inclusion/ exclusion criteria for data sharing
- Explore synthetic data

4

PROSPECTIVE VALIDATION STUDIES

- Capture data that can be used prospectively to assess model performance
- Identify metrics
- Iterate using “sandbox” or phased approach

Weller et al. 2024; Alexander, et al. 2023

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FOOD SAFETY 2030

How will we measure progress?

- Scanning a bag of lettuce and immediately know where it came from and if it's tied to an outbreak.
- Receiving a text message that says you've purchased something that's been recalled.
- AI has enabled FDA to significantly increase its predictive capability of finding contaminated food.
- Knowing the potential impact of weather events on the safety of foods growing hundreds of miles away.
- Water used to grow produce is monitored in real-time using sensor monitoring on a smart device.
- Reduced rates of foodborne illness (e.g., **11.5** *Salmonella* infections per 100,000 ppl)

THANK YOU

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