



Bridging the gap between photonics and the food industry

Marco Snickers

Delft, September 2019



Faith Dickey holds the female world record for the longest free solo slackline walk. | Courtesy Faith Dickey

de Volkskrant

Columns & Opinie

Video

Wetenschap

Mensen

De Gids

Cultuur &

NIEUWS ZELFSCANKASSA'S

Albert Heijn introduceert winkel zonder kassa en personeel

Albert Heijn draait de komende twee maanden een proef met een volautomatische winkel zonder kassa waarin klanten hun producten niet meer zelf hoeven te scannen of af te rekenen. Computers, camera's en sensoren registreren de artikelen waarmee ze naar buiten stappen en schrijven de kosten elektronisch af.

Peter van Ammelrooy 5 september 2019, 7:33



Artificial intelligence helps banana growers protect the world's most favorite fruit

Date: August 12, 2019

Source: International Center for Tropical Agriculture (CIAT)

Summary: Using artificial intelligence, scientists created an easy-to-use tool to detect banana diseases and pests. With an average 90 percent success rate in detecting a pest or a disease, the tool can help farmers avoid millions of dollars in losses.

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FULL STORY





By Shiraz Jagati

SEP 03, 2019

Walmart's Foray Into Blockchain, How Is the Technology Used?

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7:55



EDITOR'S CHOICE

Bitcoin Deposited in Bakkt Warehouse
Protected by \$125M Insurance

New Analysis: Every Bitcoin Holder Makes a
Profit After 1,335 Days

Investment Giant Schwab Steering Clear of
Crypto 'For Now': Sources

Bitcoin Price Wobbles Toward \$10K as
Altcoins Push Dominance Under 70%

Top-5 Crypto Performers: XMR, EOS, BCH,
BTC, DASH

Meten is weten

zero.
food waste

Van salades tot soep, ministerie meet eigen voedselverspilling

⌚ DINSDAG, 08:58 POLITIEK



Precision farming based on real-time nutrient intelligence

Worldwide population is increasing and food production has to double to keep up with the growing demand. With AgroCares' proven technology farm management can begin to behave like chief operating officers, managing their fields, animals and resources like never before and achieving new levels of productivity. We give agribusinesses opportunities to grow with fewer resources.



Tomato yield

9x

more per acre
than others

Food=

10%

Dutch
economy

Population
Growth:

+70%

In 2050

| MAGAZINE |

THIS TINY COUNTRY FEEDS THE WORLD

The Netherlands has become an agricultural giant by showing what the future of farming could look like.

Kennis & Innovatieagenda

2.5 Kernthema Slimme Technologie

Ambitie

In alle kernthema's is technologie van groot belang. Hierbij gaat het om het slimmer en preciezer produceren en verwerken met behulp van bijvoorbeeld sensoren en drones, grondstofbesparende technologieën, toepassingsmogelijkheden van het internet-of-things, blockchains, de inzet van data-analyse en systeemarchitectuur en -integratie.

In dit kernthema wordt samengewerkt met de Topsector High-Tech Systems & Materials (HTSM) en de Topsector Tuinbouw & Uitgangsmaterialen onder de koepel High Tech to Feed the World (HT2FtW). Hierin worden de volgende thema's onderscheiden:

- Data collectie: sensoren, detectie, vision-systemen;
- Analyse en benutting van data: ICT, Big Data, interpretatie (van data naar informatie);
- Automatisering en controle: activering, manipulatie, handling, robotica;
- Materialen en verwerking: nanomaterialen, soft matter, slimme oppervlaktes.

Activiteiten

De huidige activiteiten bestaan uit projecten en programma's die over verschillende roadmaps in de vorige kennis- en innovatieagenda waren ondergebracht.

De Topsector Agri & Food wil de komende jaren specifiek inzetten op:

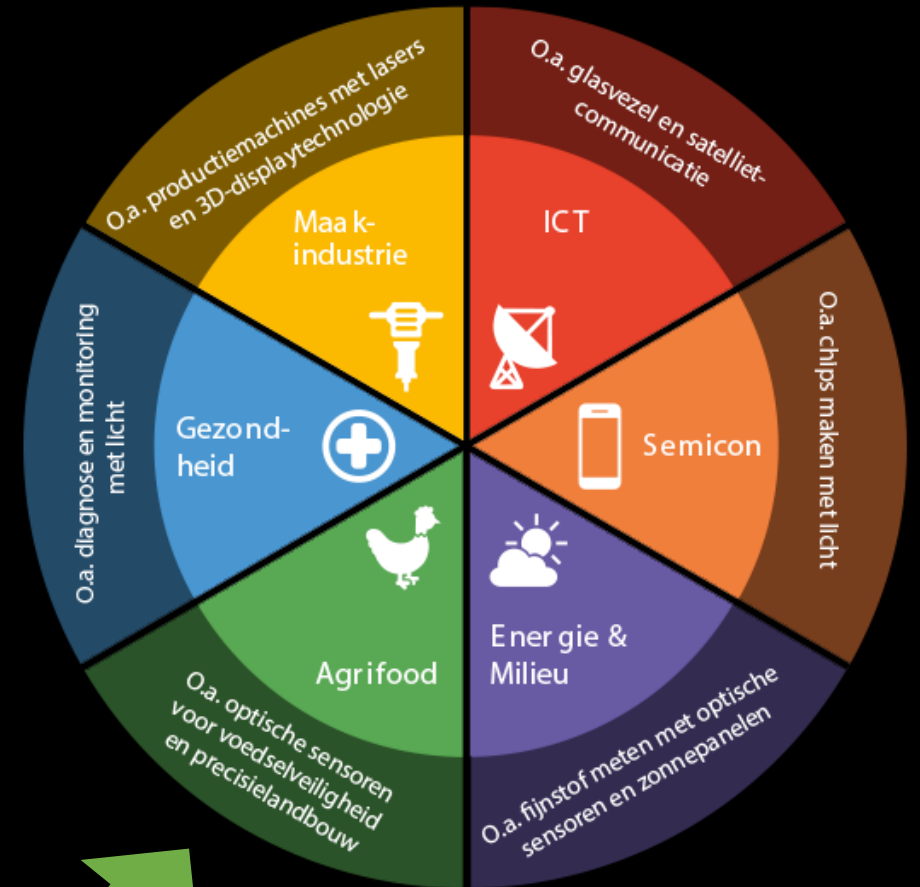
- Digitalisering agrifoodsector (NL Next level) en samenwerking met de coöperatieve DataHub.
- Organisatie van gezamenlijke calls met HTSM en T6U voor HT2FtW;
- Ontwikkeling van een fundamenteel programma HT2FtW (via NWO);







Faith Dickey holds the female world record for the longest free solo slackline walk. | Courtesy Faith Dickey



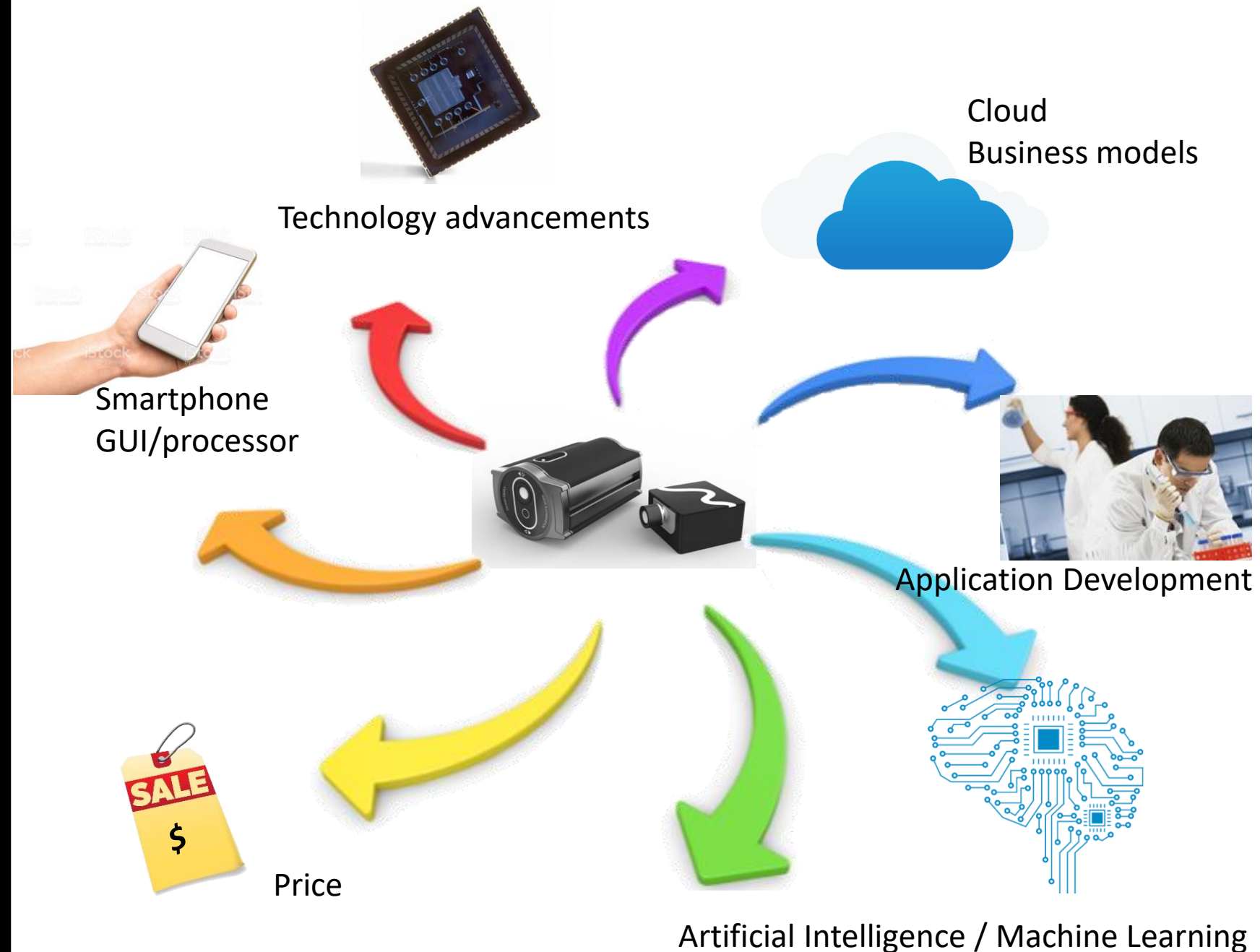
Autonomous Greenhouses Call - WUR



Photonics Technologies in Food industry

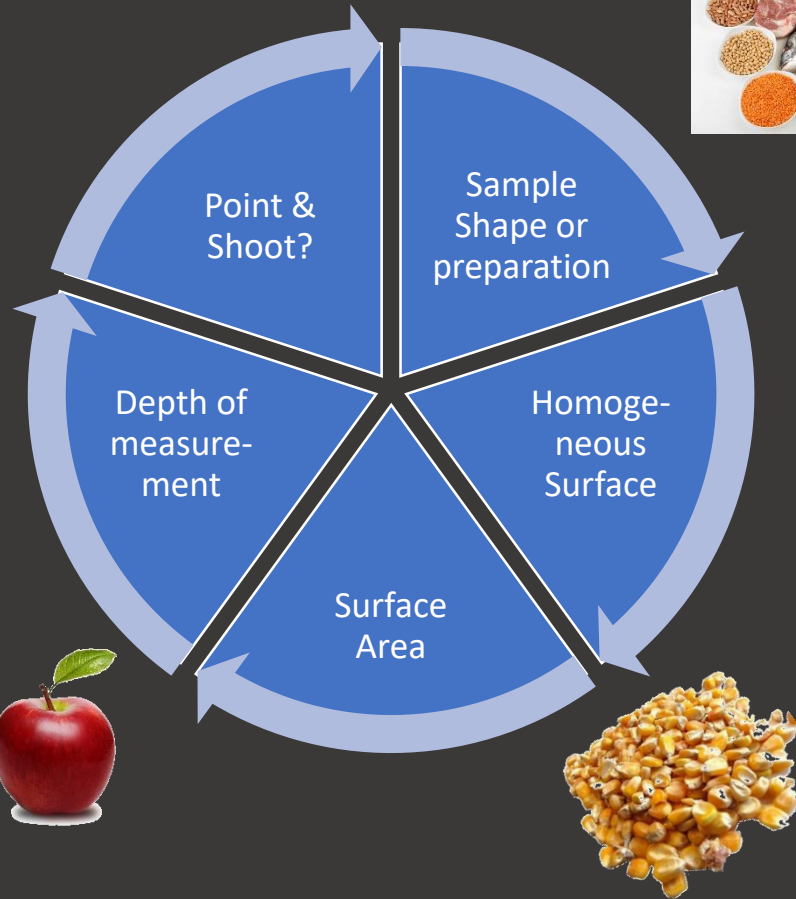
-

Combining with key technologies to provide solutions...

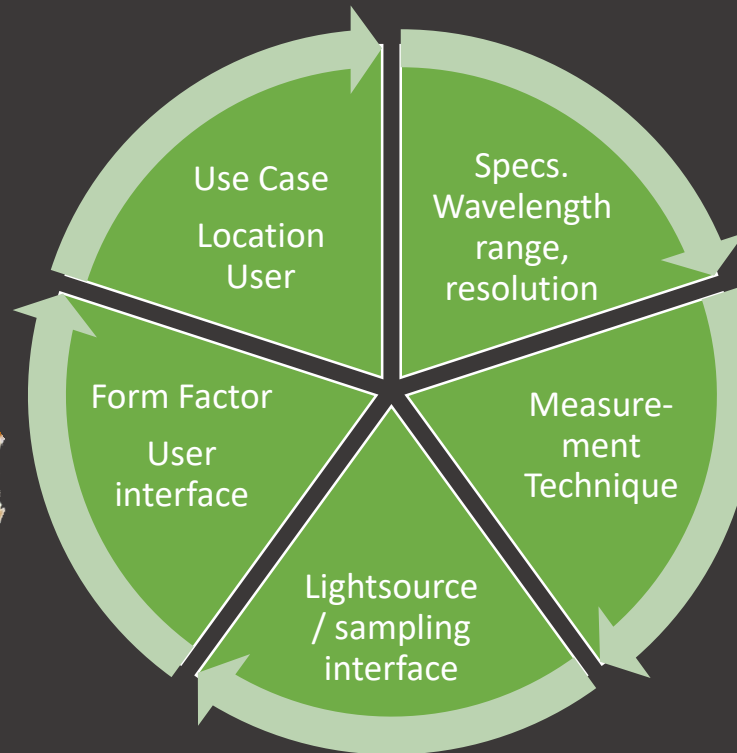


Bridging the Gap between technology and application

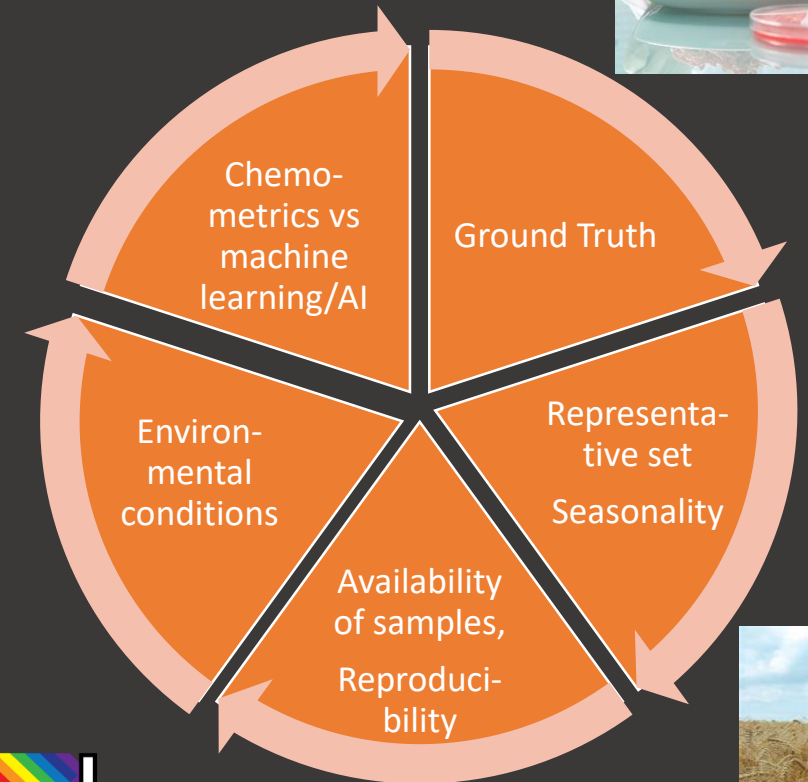
Sampling Interfaces



Hardware Choices

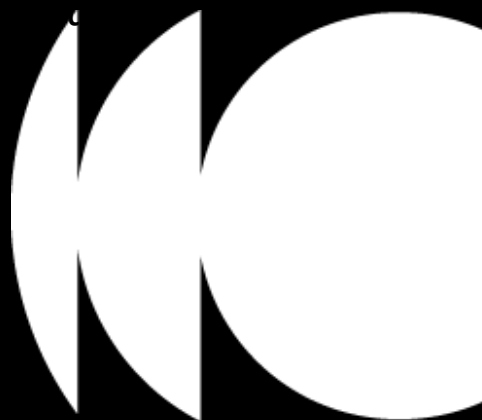


Building Algorithm & database



Spectral Sensing or Imaging





Since 1989, the largest manufacturer of modular spectrometers
ISO 9001:2015



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Unlock the Unknown

End guessing. Equip humanity with applied spectral knowledge to make precisely informed decisions

Research & Science

Biomedical & Life Sciences

Environmental

Safety & Security

Industrial & Process

Food & Agriculture

Wave Illumination



UV-Vis, NIR, MIR & Raman

Multispectral Imaging

Spectral Sensing

Modular Components

System Development

Manufacturing & Service

Applied Spectral Knowledge

Thank you!



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