

Some initiatives of WUR in relation to AgTech

Laurens Klerkx- Knowledge, Technology and Innovation Group



WUR's approach

- Full spectrum from basic to applied and near market research
- Many projects take a transdisciplinary approach (triple/quadruple helix approach – natural and social sciences)
- Embedded within a well connected and interactive knowledge and innovation system (strategic alliances)
- Close connection between research and teaching

Central themes TKI Agri & Food



Some WUR initiatives

- Agro Food Robotics
- Wageningen Data Competence Center
- Farm of the Future
- A&F Next
- DigiMetis
- Wageningen Academy

Agro Food Robotics

In the field of Agro Food Robotics research and development, Wageningen University & Research is worldwide the most experienced and innovative organisation. More than 60 engineers and researchers work together with industrial partners on new robotic systems for agri and food.

We design agricultural robotic systems for marine, livestock, open field, horticulture, fresh chains and food, together with many experts on these application fields within Wageningen. We specialise in artificial intelligence and sensing, especially spectral, learning and vision.

> Contact



Optimal breeding with robotics



Smart sensor systems and process control for optimal product quality



Robotics for hands-free production



Want to know more? Please contact the Programme Manager Agro Food Robotics
ing. E.J. (Erik) Pekkeriet
[Contact form](#) + Show more (1)

Wageningen Data Competence Center

The WDCC is established to support developments in the field of (big) data and data science at Wageningen University & Research.

WDCC brings education, research, value creation, infrastructure and data management together. The WDCC facilitates developments in these fields and serves as an internal and external contact point.

This way, WUR works on new applications 'To explore the potential of data to help improve the quality of life'.

Unfortunately, your cookie settings do not allow videos to be displayed - check your settings

Support and information
Wageningen Data Competence Center
[Contact form](#)



"Connecting data"

More information:

- > About WDCC: who we are
- > Data Desk: For all your data questions
- > Use cases: How data works at WUR
- > Frequently asked questions
- > Diverse Data science



Onderwijs & Opleidingen Onderzoek & Resultaten Waardecreatie & Samenwerking

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Project

WUR geeft kringlooptandbouw handen en voeten op Boerderij van de Toekomst

Wageningen University & Research werkt samen met het Ministerie van Landbouw, Natuur en Voedselkwaliteit en andere stakeholders aan een nieuw concept om kringlooptandbouw in de praktijk handen en voeten te geven. In Lelystad hebben we een proeflocatie ingericht volgens agro-ecologische principes. Wilt u meewerken aan deze Boerderij van de Toekomst? Neem dan contact op.

Op een fysieke locatie in Lelystad hebben we een faciliteit



Wilt u met contact op
i.e. P.L. (Ph)
[Contact](#)



Projectinformatie
Kringlooptandbouw
Boerderij van de Toekomst

Status: Lopend
Start project: 25-jun-2020
Partners: Wageningen University & Research



Data Science Research



Data Science Education



Data Science Hub

Events
> 22 September 2020 - Webinar
Wageningen Data Competence Center organiseert Data Desk
> 23 September 2020 - Webinar
Wageningen Data Competence Center organiseert
Science under pressure opens



Education & Programmes Research & Results Value Creation & Cooperation

Home > Value Creation & Cooperation > WDCC > Course Towards Data-driven Agri-Food Business

Course

Course Towards Data-driven Agri-Food Business

Digitalization, Big Data and Artificial Intelligence provide numerous opportunities for agri-food production. The battle for data from farmer to consumer has begun! Data-driven agri-food business requires developing new business models. Concurrently, you have to deal with public concerns about privacy and distribution of power while there is also a strong movement to open up the data and algorithms for sake of food transparency. This course gives insight in Big Data challenges and organizational issues concerning new and fair business models for data sharing in agri-food business.

Programme manager
ir. MGC (Monique) Tulp-Jansen
[Contact form](#)



Digital Twins

Digital Twins are virtual versions of both living and non-living organisms and objects such as cells, plants, animals, humans and ecosystems, and inanimate objects such as food chains and supply chains. With Digital Twin projects, WUR strives to achieve significant scientific and societal breakthroughs in its domain.

Digital Twins can be used to describe, analyse and simulate processes and organisms through data-integration, artificial intelligence (AI) and machine learning. This not only allows us to better understand, describe and analyse reality, it also enables us to predict the future of these objects more accurately.

Advantages of digital twins

One of the benefits of a digital twin in comparison to a traditional crop model is that the twin model is continuously updated according to the real-time, actual circumstances in the greenhouse. Thus, the model's accuracy is increased continuously.

Start 3 digital twin projects

Wageningen University & Research has launched its first 3 digital twin projects in January 2020:



DIGIMETIS SYMPOSIUM

On 26 November we are organising our next DIGIMETIS symposium entitled 'Digital agriculture and rural communities: current perspectives on the digital divide' with prominent speakers specialized in the relationship between digital agriculture and the effects on social inequalities, such as Kelly Branson, Leanne Townsend and Chris Addison.

The programme looks as follows:

- 10:00 Kelly Branson (University of Oxford)
Non-attendance
- 10:30 Leanne Townsend (James Hutton Institute)
Non-attendance
- 11:00 Chris Addison (CIR)
Non-attendance
- 11:30-12:30 Presentation of two refereed abstracts (Biology) and Science Engagement (Biology, and Innovation)
- 12:30-13:30 Lunch with a keynote by Agre van Haren from Clarifai

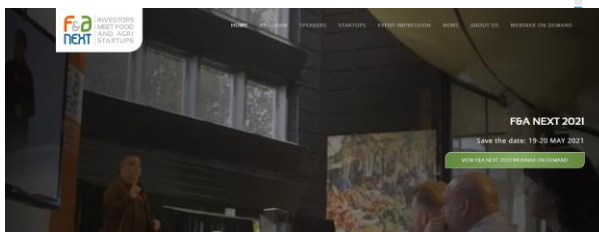
NOVEMBER 26 - 10:00 to 13:30 - IMPULS

Do you have questions about Digital Twin? Please contact:
dr. W.J. (Willem Jan) Knibbe
[Contact form](#)



WUR's investment themes

Digital Twins is one of three investment areas where WUR strives to speed up the development of expertise and innovation in its domain, as established in the Strategic Plan 2019 - 2022.

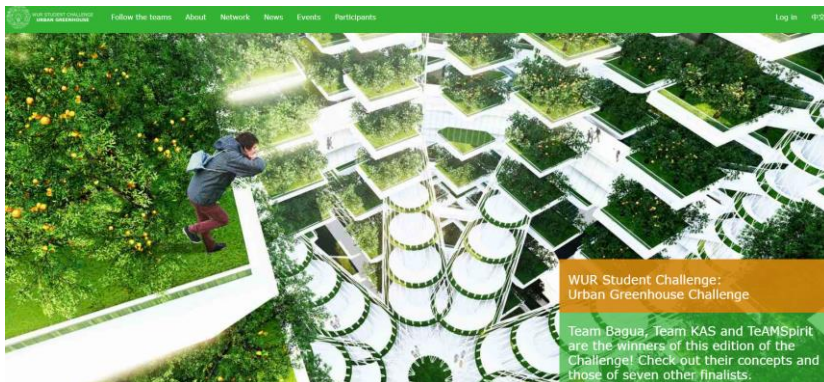


F&A NEXT 2021
Save the date: 19-20 MAY 2021
[VIEW F&A NEXT 2021 WEBSITE ONLINE NOW](#)

Transdisciplinarity, interaction with private sector & civil society in research and teaching



The Synergia programme is a crossover programme of the Dutch Top sectors Agri & Food, Horticulture & Starting Materials and HighTech Systems and Materials, funded by the Netherlands Organisation for Scientific Research (NWO). This seven-year research programme will be executed by a unique and broad consortium consisting of Wageningen University & Research, University of Twente, Eindhoven University of Technology, Delft University of Technology, Radboud University, TIFN and a broad range of private sector partners. The programme will receive €7m funding from NWO and the private sector.



The research programme consists of six research lines covering and integrating relevant scientific fields:

- Understanding biological/ecological processes in different archetype systems (single-crop greenhouse horticulture, dairy cows interlinked with feed crops, multi-crop arable farming in field soils),
- Smart crop and animal sensing (to monitor biological processes),
- AI-based decision making (for optimal decision making and management),
- Robotic actuation (to enable complex handling & operation of the new systems),
- Societal acceptance and transition, and
- Integration and validation in three use cases.

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Home Pixel cropping

Project

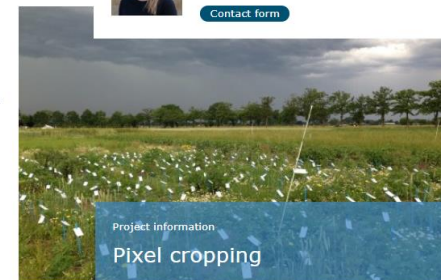
Pixel cropping

Evidence is building that the use of more species in arable fields has strong positive effects on crop yields, resource-use efficiency, biodiversity, and pest, pathogen and weed suppression (1-5). Research has also shown that smaller field sizes and higher resolutions of diversity within the field (i.e. smaller-scale intercropping) can deliver more ecosystem services than bigger areas of sole crops (6-8). Inspired by this evidence, we initiated the WUR pixel cropping experiments to test 'extreme' levels of in-field crop diversity. We want to know if simultaneously introducing diversity in three dimensions (space, time, and genes) and at high resolutions can maintain good yields and also deliver other agro-ecosystem services.

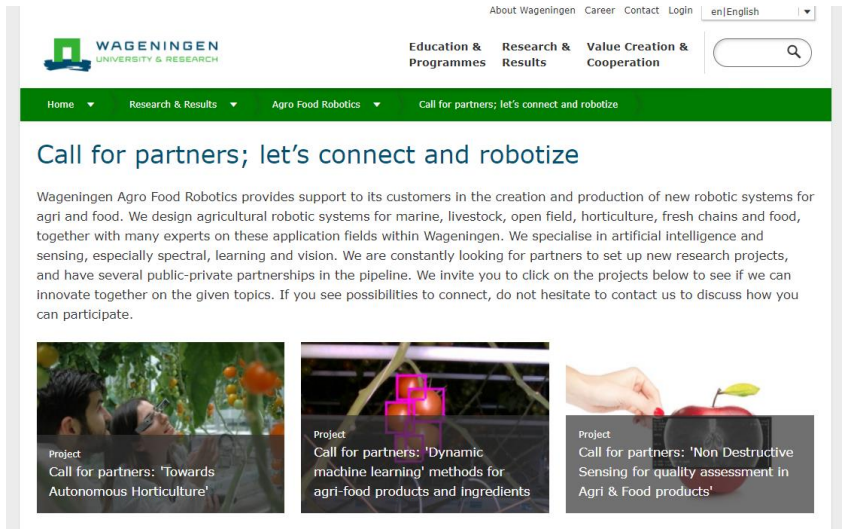


Do you have a question about pixel cropping? Ask our expert: LLE (Lenora) Ditzler MSc

Contact form



WUR is not doing it alone and not the only one in The Netherlands



Wageningen University & Research

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Home Research & Results Agro Food Robotics Call for partners; let's connect and robotize

Call for partners; let's connect and robotize

Wageningen Agro Food Robotics provides support to its customers in the creation and production of new robotic systems for agri and food. We design agricultural robotic systems for marine, livestock, open field, horticulture, fresh chains and food, together with many experts on these application fields within Wageningen. We specialise in artificial intelligence and sensing, especially spectral, learning and vision. We are constantly looking for partners to set up new research projects, and have several public-private partnerships in the pipeline. We invite you to click on the projects below to see if we can innovate together on the given topics. If you see possibilities to connect, do not hesitate to contact us to discuss how you can participate.

Project Call for partners: 'Towards Autonomous Horticulture'

Project Call for partners: 'Dynamic machine learning' methods for agri-food products and ingredients

Project Call for partners: 'Non Destructive Sensing for quality assessment in Agri & Food products'



Towards Healthy Planet Diets

PATHWAYS TO SUSTAINABILITY

Future Food Utrecht



agRO BO food

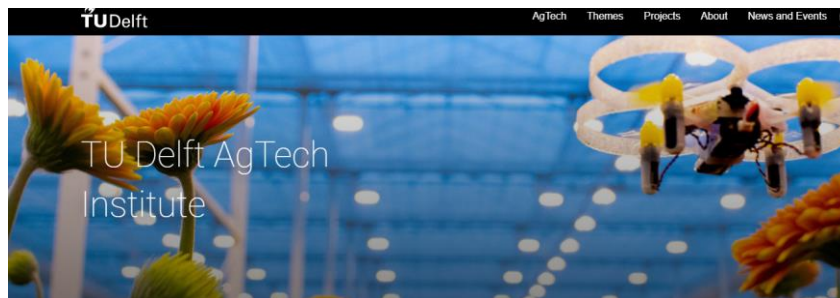
NETWORK OF DIGITAL INNOVATION HUBS IN ROBOTICS



CHALLENGING FUTURE GENERATIONS

Complementary in knowledge and talent, driven to contribute to societal transitions.

TU/e Wageningen University Utrecht University UNIC Utrecht



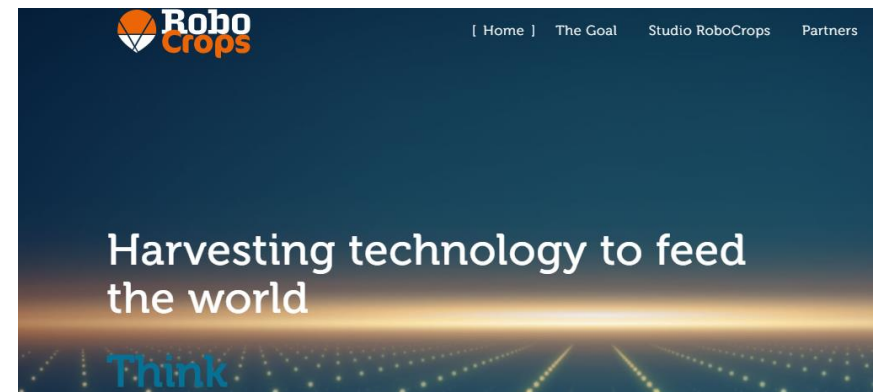
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WAGENINGEN UNIVERSITY & RESEARCH



RoboCrops

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Harvesting technology to feed the world

Think