

THE FUTURE OF FOOD PRODUCTION & HEALTH CARE

The future of global food supply

Food production is under great pressure. The head of the EU's green transition, Frans Timmermans, stated in June 2022 that it is urgent to make agriculture in Europe sustainable. He states that Europe is at risk of a food crisis in 10-15 years if the use of pesticides is not significantly reduced (Investigate Europe, 2022). Today's technology allows us to develop powerful tools to overcome these challenges, such as Kilter Systems which uses machine vision and nozzle technology to reduce pesticide use by 95%. How can today's technology be used for similar revolutions in future food production?

The future of digital health care

The pandemic forced the world's healthcare systems through a digital revolution like we've never seen before. The experiences from 2020 can be used to create valuable changes for the healthcare system and their patients. For example, PwC's report on Global Top Health Industry Issues 2021 reports approx. 10% increase in the use of digital solutions during the pandemic. 91% of those who have used digital video solutions in the healthcare system during the pandemic report that they are willing to use the solutions also after the pandemic (PwC, 2022). Users' willingness to use digital solutions is an important step in being able to further develop an efficient and responsive healthcare system. How can the takeaways from the pandemic be used to improve the healthcare system and the everyday life of patients with the help of today's technology?

The task is as follows:

- Propose a digital technology concept (e.g. IoT system, real time system) that solves a relevant problem related to the future food supply OR improvement of the health sector. The concept must be able to be implemented with today's technology.
- Propose an overall system architecture for the solution and justify the choice of libraries, overall components and tools that can be used. Briefly discuss the advantages and disadvantages of the proposed architecture.
- Write pseudocode or code for an interesting module of the system.

Submission requirements:

- Submission must consist of a video pitch in .MP4 format (max. 4 min) and a report (one PDF file, max 5 pages) consisting the code/pseudocode and illustration of system architecture. Additional documentation can also be attached to PDF where appropriate.
- The concept must be implementable with existing technology.

- The solution shows the team's ability to make good assessments and discuss their own solution.
- The solution for the chosen interest module shows an understanding of the subject field.

Submission instructions:

- One of the team's participants creates a folder with PDF and video pitch that is uploaded to their own private NTNU OneDrive user
- The folder must be named the same as the team's name.
- An open link to the folder with PDF and video pitch must then be submitted via adigomechatronics.no/konkurranse/ within the deadline 11th September 2022 23:59.
- It is the team's own responsibility that:
 - the link gives Adigo access to the contents of the folder
 - the link is valid up until the winner is announced on 15th September 2022
 - the team set aside sufficient time to prepare the submission
 - Adigo only gets access to the competition folder and no other access
 - Adigo's access to the folder is removed by the participants after 15th September 2022

Sources:

Investigate Europe. 2022. *Frans Timmermans, EU Commission Vice-President: "Without pesticides reduction, we will have a food crisis in Europe"*. [online] Available at: <<https://www.investigate-europe.eu/en/2022/frans-timmermans-pesticides-reduction/>> [Accessed 16 August 2022].

PwC, 2022. *Global Top Health Industry Issues 2021*. [online] Available at: <[http://PwC's Global Top Health Industry Issues 2021](http://PwC's%20Global%20Top%20Health%20Industry%20Issues%202021)> [Accessed 16 August 2022].