

Agriculture, AI and Robotics

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Queen's Anniversary Prize Winners!



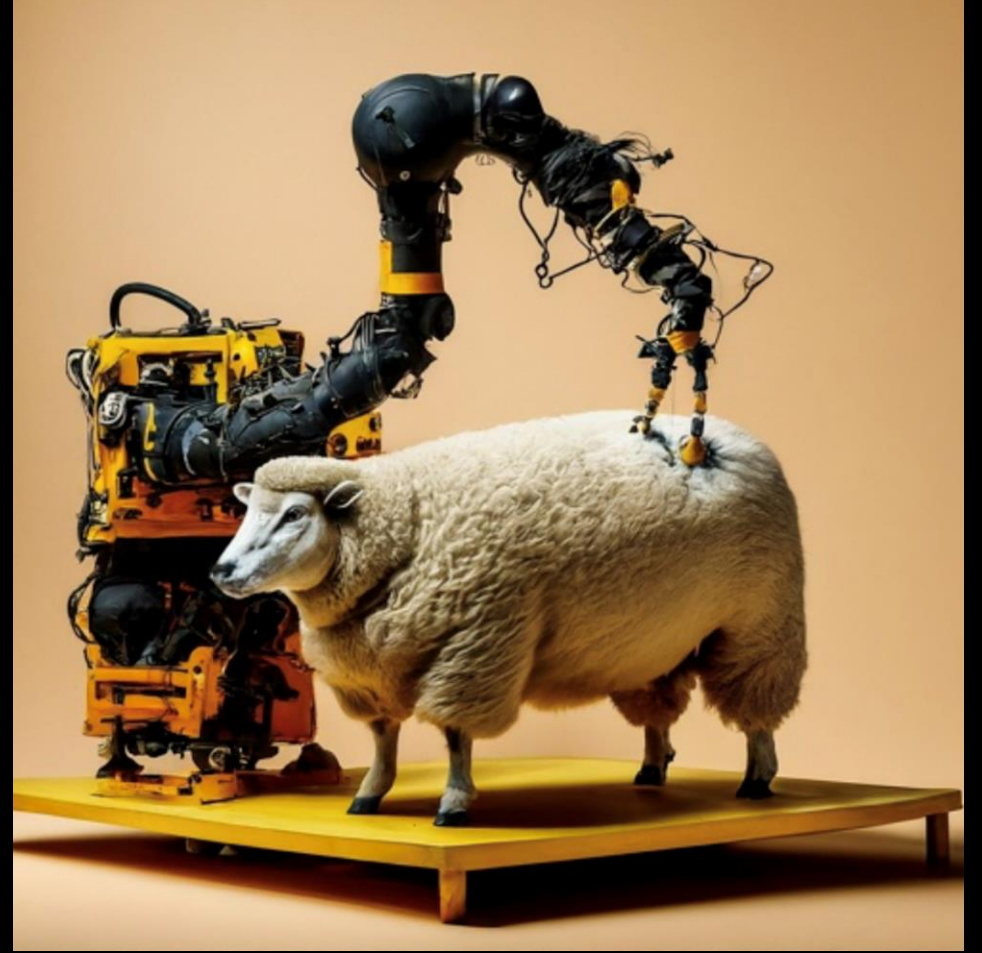
University of Lincoln

Innovation in agri-food technology

Innovations in agri-food technology including the development of robotic systems in harvesting crops, use of AI to support farming businesses in accessing global markets, and education programmes supporting labour supply, leading to improved productivity, efficiency and sustainability in rural economies.



Dystopian or utopian agriculture?



Watch out Gardeners Question time...

Chat GPT Question....

Q. I have a grey mould on my strawberry, what is it? and how do I treat it?

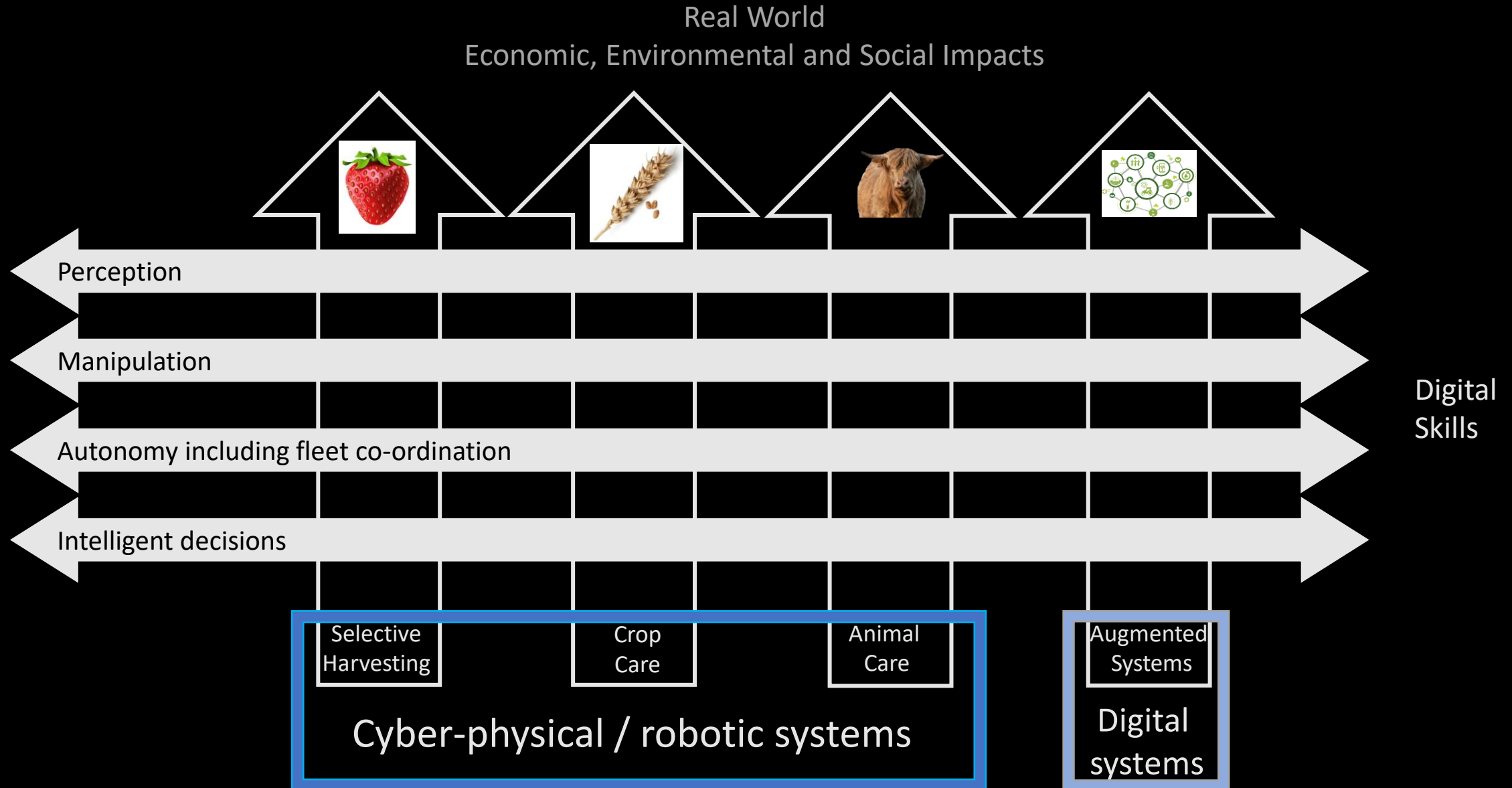
A. Grey mould on strawberries is most likely caused by a fungus called *Botrytis cinerea*. This fungus thrives in cool, damp conditions and can be a common problem in strawberries, especially if the weather is humid. Here's how you can identify and treat grey mould on your strawberries.....



So much for
Dystopia...
The world
is changing and
fast...where can
robotics and AI
help?

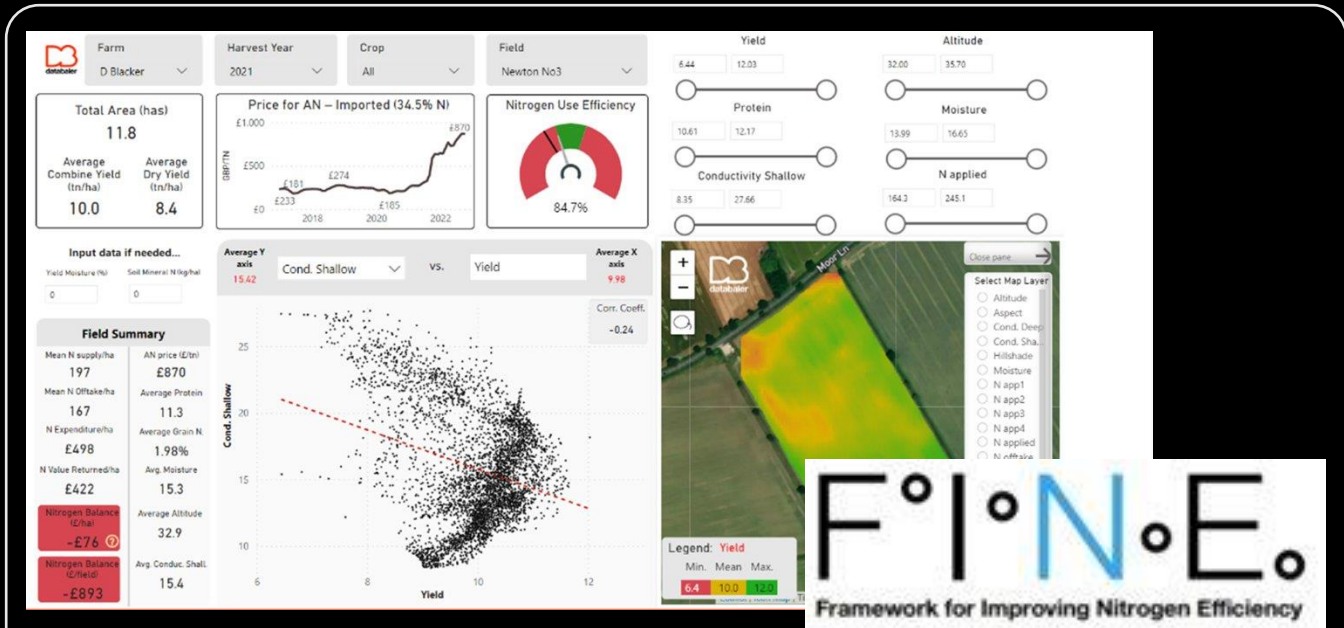
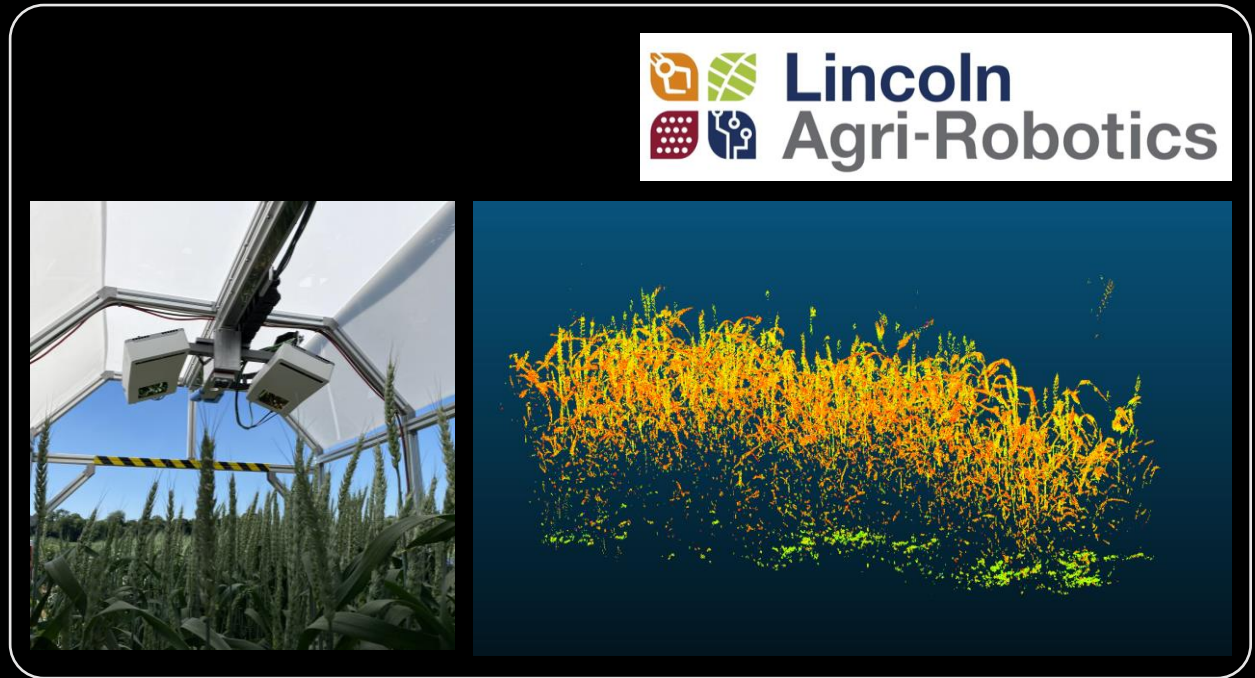
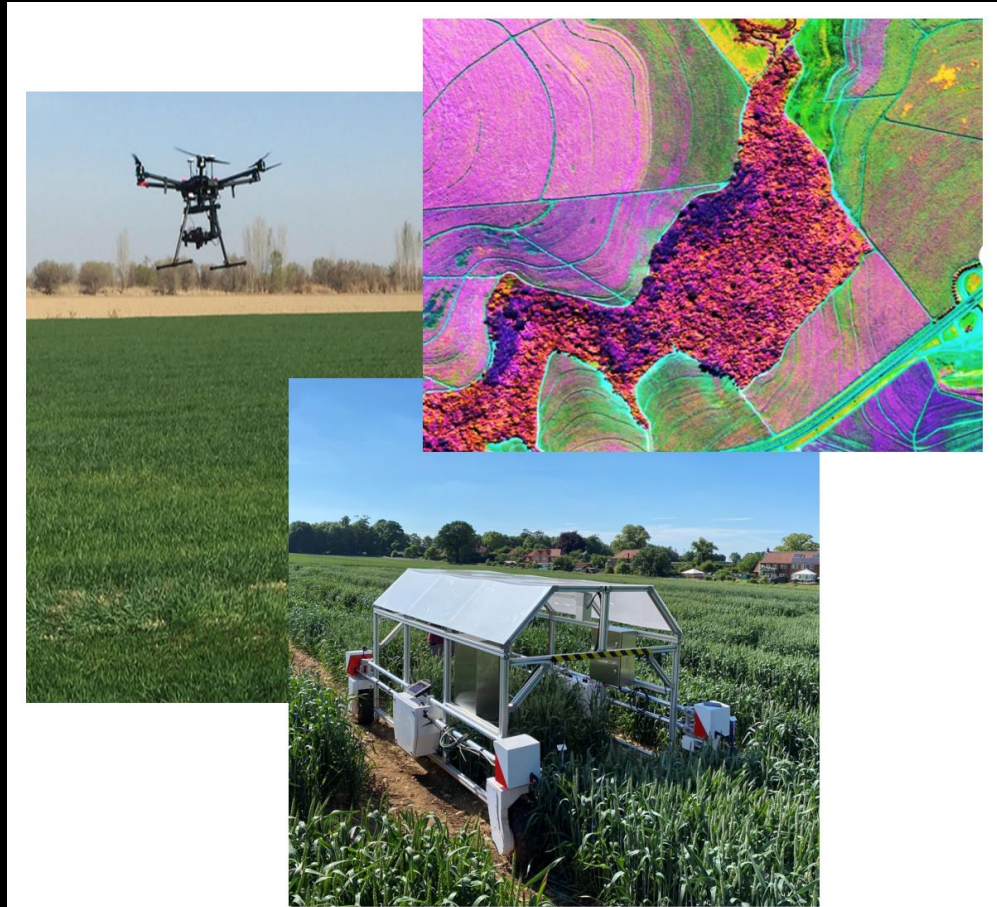


Agriculture operates within the physical world...



Increased focus on crops...

Hyper-NUE



Farm: D Blacker
Harvest Year: 2021
Crop: All
Field: Newton No3

Total Area (has): 11.8
Average Combine Yield (t/ha): 10.0
Average Dry Yield (t/ha): 8.4

Price for AN – Imported (34.5% N)
Line graph showing price from 2018 to 2022. Values: £233, £181, £274, £185, £870.

Nitrogen Use Efficiency: 84.7%

Input data if needed...
Yield Moisture (t/ha): 0
Soil Mineral N (kg/ha): 0

Field Summary

Mean N supply/ha	197	AN price (£/t)	£870
Mean N Offtake/ha	167	Average Protein	11.3
N Expenditure/ha	£498	Average Grain N	1.98%
N Value Returned/ha	£422	Avg. Moisture	15.3
Nitrogen Balance (£/ha)	-£76	Average Altitude	32.9
Nitrogen Balance (£/field)	-£893	Avg. Cond. Shal.	15.4

Yield vs. Cond. Shallow
Scatter plot showing a negative correlation with a correlation coefficient of -0.24.

Map Layer: Select Map Layer (Altitude, Aspect, Cond. Deep, Cond. Sha., Hillshade, Moisture, N app1, N app2, N app3, N app4, N applied, N applied)

Legend: Yield
Min. Mean Max. 6.4 10.0 12.0

FINE Framework for Improving Nitrogen Efficiency

Artificial Intelligence Should Make Us Rethink Our Skilled Migration Policy



(Alamy)



George Eustice MP

4 min read | 30 June

We must use the advent of AI to update our outdated view of "skilled" work, as the current policy is leading to labour shortages and fuelling inflation.

“Developing a strawberry picking robot more complex than building one to catch a cricket ball”



Comment
from George
Eustace

A student of
agriculture...

Technology
alone
is not the
panacea



Independent report

Automation in horticulture review

Published 27 July 2022

Recommendation 1: Defra should consider pursuing a long-term Seasonal Workers Scheme for edible and ornamental horticulture starting in 2022

Recommendation 2: Defra should consider convening a consortium that brings together UK government departments, horticulture industry and technology companies to drive significant adoption of available and proven technologies by growers

Recommendation 3: Defra should consider launching a robotic crop harvester mission to fast-track innovative research and development of systems currently in the 'valley of death'

Green shoots..... Starting signs of adoption on farms.....



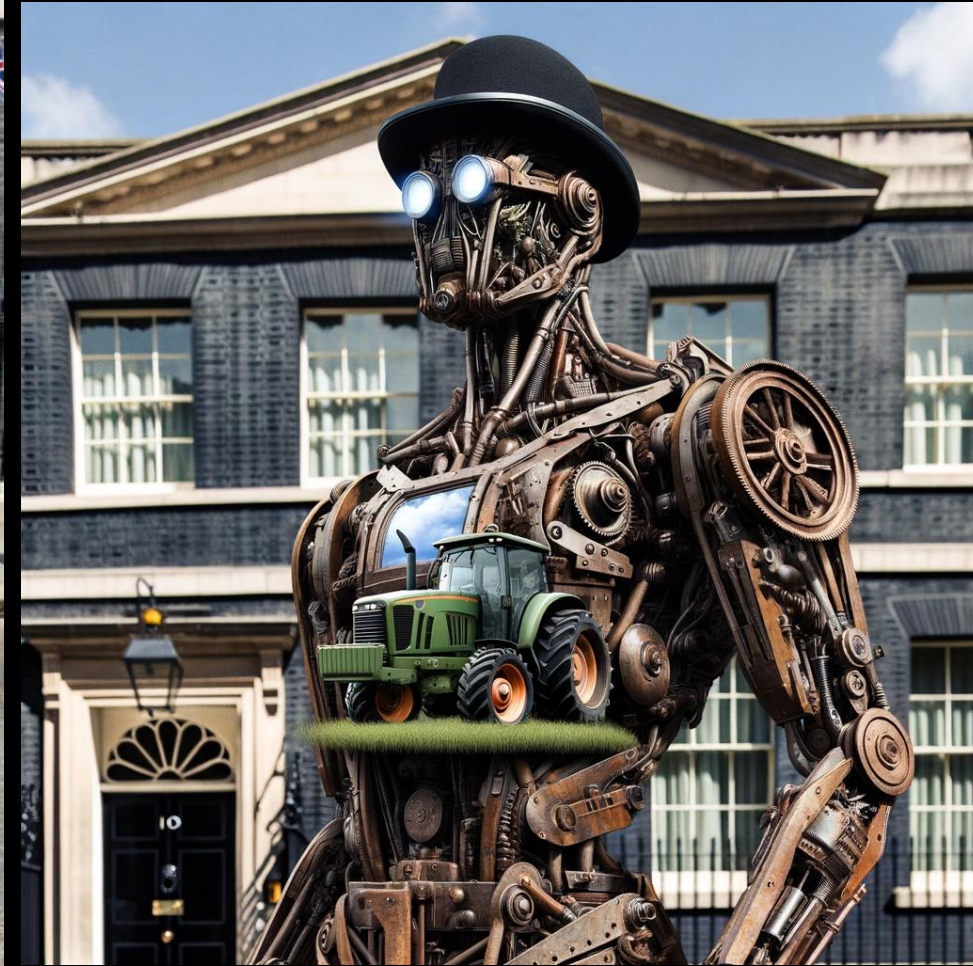
British innovators and top investors announced for Global Investment Summit



We can contribute.....EPSRC PBIAA



Will the robots take over.....Artificial General Intelligence (AGI)?



What the robot thinks...a General Election is coming

Final word...a robot...!

Will they take over in 5 years?

”While automation and robotics will continue to play an increasing role in agriculture, it will likely be a gradual process, and it may take more than five years for them to significantly transform the industry. Farmers and agricultural businesses will adopt these technologies as they become more practical, cost-effective, and well-suited to their specific needs. Human labour will likely remain an integral part of agriculture, complementing automation to improve efficiency and productivity.”

CHAT GPT