

iagre.org

Agriculture = Forestry = Horticulture = Environment = Amenity



Institution of Agricultural Engineers

Landwards Conference 2019

Can Big Data lead to Smarter Farming?

This conference will explore the question as to whether “big data” will be the new tractor for agriculture

Date: TBA

Location: Cambridge Area

Background and Context

The 21st century has seen a rapid increase in the amount of data being collected throughout the agricultural supply chain i.e. from field to fork. For example, farmers use sensors for soil sampling and mobile apps, cameras and drones to monitor pests and diseases, generating huge amounts of data. Recent technological developments in sensors and remote monitoring have increased the volume, variety, velocity and veracity of agricultural data...but how can farmers, agribusinesses and researchers gain real **value** from all this “big data”?

The challenges and opportunities for agricultural engineering include:

- Smart sensors and devices produce vast amounts of data that should provide unprecedented decision-making capabilities.
- Big Data is expected to have a large impact on Smart Farming and the Internet of AgriThings throughout the whole supply chain.
- Big Data is expected to cause major shifts in roles and power relations among traditional and non-traditional players.
- Governance (incl. data ownership, privacy, security) and business models are key issues to be addressed in future research.

The UK agricultural industry should harness the power of data to support decision-making and ensure future success. There are now hundreds of companies offering everything from farm management software and precision tools to bots and drones, all using the power of big data. However, data experts say 90 per cent of the data collected is wasted.

This conference will explore how ‘big data’ is being used to improve agricultural practices, how farmers and technologists should work together to extract the value of ‘big data’ and identify future development opportunities.

Key benefits of attending

- Find out how ‘Big Data’ is being used in UK agriculture today
- Gain an oversight of technological developments emerging in modern Smart farming and the contributions of agricultural engineering and AgriTech initiatives
- Learn about cutting edge developments and emerging best practices of using ‘Big Data’ in land based industries
- Contribute to the Big Data and Smart Farming debate
- Meet like-minded people and forge future business relationships
- Develop ideas and initiate new approaches alongside industry leaders

Part 1 – Setting the Scene

0930	Arrival, Registration and Networking
1000	<p>Introductory Remarks – <i>Understanding the Big Data challenge and the opportunities this brings for farmers and the wider supply and support system. Looking at the engineering and technology challenges and opportunities.</i></p> <p>Professor Jane Rickson – President IAgrE</p>
1015	<p>The role of Big Data in unlocking unimaginable solutions to feeding the world and protecting the planet - <i>Agrimetrics provides, connects and analyses complex data to drive greater productivity for agrifood businesses and deliver food sustainably. We aim to help solve the global challenges of economically, ethically and environmentally sustainable food production through the use of data, analytics and artificial intelligence. What opportunities does this present agricultural engineers and technologists?</i></p> <p>Benjamin Turner, Chief Operating Officer, Agrimetrics</p>
1045	<p>How will Big Data transform agriculture – <i>Data and analytics platforms will help leading, global organizations to understand and review trends as they happen enabling them to make strategic business decisions. Integrating, enriching, cleaning and delivering accurate and timely data from multiple trusted sources will transform agriculture. From growers, with their advisors and suppliers, becoming more productive and growing higher quality and more profitable produce, to processors seeing greater profits through more efficient factories and logistics operations, data and analytics platforms have the capability to help transform the supply chain like no other.</i></p> <p>Speaker from Proagrica - TBC</p>
1115	Coffee Refreshment Break
1145	<p>The next generation Claas LEXION Combine Harvester – <i>How data collection can contribute to smarter farming. Optimising machine performance with continuous data access allowing the manufacture to fine tune the machine “on the move” through simultaneous “access data” and “connectivity” and on board support. In addition, “data delivery” and “data reception” to or from other systems and decision making tools. These tools can be vehicle/fleet related or contribute to the classic precision farming approach enabling an operation to utilize input more effectively - the right amount, at the right place and time.</i></p> <p>Dr. Joachim Stiegemann – Claas Product Management</p>
1215	<p>FarmBeats – IOT for Agriculture – <i>Our goal is to enable data-driven farming. We believe that data, coupled with the farmer’s knowledge and intuition about his or her farm, can help increase farm productivity, and also help reduce costs. However, getting data from the farm is extremely difficult since there is often no power in the field, or Internet in the farms. As part of the FarmBeats project, we are building several unique solutions to solve these problems using low-cost sensors, drones, and vision and machine learning algorithms.</i></p> <p>Speaker from Microsoft TBC</p>
1245	<p>Panel Discussion: In light of this morning discussion, will data be the great panacea it is claimed to be? Will “big data” be as revolutionary as the tractor and mechanisation?</p> <p>Chaired by Andy Newbold – IAgrE Past President</p>

1315 Lunch & Networking

Part 2 – Parallel Workshops – Lessons from the Land

Time	Emerging Research and Policy Themes	On Farm Developments
1400	<p>Rob Simmons (Cranfield University)</p> <p>Development of a Soil Management Information System for Horticulture</p> <p>The Climate Corporation and Gamaya already offer data-driven agricultural insights that take soil type, seed suitability and local weather patterns into account.</p>	<p>TBC</p> <p>On farm developments in data collection and its application in machine operation and application. An overview of integrated, precision agriculture systems to maximize farm productivity and profitability including:</p> <ul style="list-style-type: none"> • Guidance and Steering • Correction Services • Flow and Application Control • Yield Monitoring • Water Management
1430	<p>Dr Ji Zhou (Earlham Institute) - TBC</p> <p>Phenomics Project Leader at Earlham Institute.</p> <p>Big-data tools to deliver smart agriculture for lab and field</p>	<p>Mark Rutter (Harper Adams University)</p> <p>Big Data and the Livestock Sector. How can Big Data be collected from the livestock sector? Sensor technologies and the animal including developments at Harper Adams. Thoughts on the ethical dilemmas of collecting data directly from animals</p>
1500	<p>Understanding the Ethics of Big Data TBC</p> <p>Data security and its ethical use if the subject of much debate. Who owns the data? How can its security be guaranteed? What challenges need to be overcome if the proactive use of data is to be secured? How can farmers be assured that their data is secure? What are the implications for engineers and technologists</p>	<p>Simon Pearson (Lincoln University)</p> <p>The use of Big Data to support autonomous systems and agri-robots. Overview of developments with the Universities of East Anglia and Cambridge</p>
1545	<p>Conference Review</p> <ul style="list-style-type: none"> • <i>Review of Conference and Next Steps</i> 	
1600	End of Conference	

When, where, how much, where to book?

When: Wednesday 30 October 2019

Where:

Cost:

Booking: