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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: Wednesday 30th October 2019

Location: Peterborough Suite, East of England Events Centre, Peterborough

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 environmental protection – <i>Agrimetrics provides, connects and analyses complex data to drive greater productivity for agrifood businesses and deliver food sustainably. This session will explore how big data emerging from engineering/machinery-driven applications is transforming and has transformed other industries and therefore where there may be great potential for Agriculture.</i></p> <p>Benjamin Turner, Chief Operating Officer, Agrimetrics</p>
1045	<p>How will Big Data Transform Agriculture – Practical Lessons from the Farm – From Agronomist to Grain Merchant, Farm Manager to Machine operator, the role of data in shaping decisions and improving yields has moved on apace. This session will look at the work of agronomists and the emerging role of Precision Technology advisor and integrator. This session will focus on how the agricultural support network will link technology, knowledge and advice to deliver sustainable farming. Linking Technology, Knowledge and Advice to Deliver Sustainable Farming</p> <p>Oliver Wood, Precision Technology Manager, Omnia Precision Agronomy</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>IOT for Agriculture – The Internet of Things has morphed into the Internet of Agri-things with an increasing number of major IT Companies putting resources into the agricultural industry. These companies have transformed other sectors and will bring novel solutions to food production helping to shorten the food supply chain, using technology and intelligence to take the farm closer to the plate. This session will look at the innovations which are being introduced and give a glimpse of the future.</p> <p>Speaker from an IT Company Requested</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>Royal Academy of Engineering Speaker</p> <p>The role of the Royal Academy of Engineering in developing research and policy themes around emerging technologies which rely on the collection and application of “Big Data” in areas such as autonomous vehicles, drone technologies, data ethics and where the government should invest in digital technologies.</p>	<p>Speaker Requested</p> <p>Developments in the use of artificial Intelligence, imagery and data analytics from satellite, drone, plane, and robot technology, to provide farmers with high-resolution maps of their crops at critical decision-making junctions in the season. Using advanced machine learning and computer vision techniques, delivering actionable insights on crop health directly to the field.</p>
1430	<p>Ron Corstanje (Cranfield University)</p> <p>The role of the UK Government Digital Champion. Developments in Agri-Informatics. The application of big data and data sciences to support grower decision making. Insights into research with multi-national Information Technology and Food manufacturers.</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>Rob Simmons (IAgrE Member and Researcher)</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>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	<p>End of Conference</p>	

When, where, how much, where to book?

When: Wednesday 30 October 2019

Where: The Peterborough Suite, East of England Arena & Events Centre, Peterborough PE2 6XE

**Cost: Member Rates: Full Member Delegate £100 + vat, Retired £75 + vat, Student £40 + vat
Non Member: Full delegate £150 + vat, Retired £100 + vat, Student £50 + vat**

Booking: <https://iagre.org/events/IAgrEConf2019>