

Panel: How is AI Changing Agri-food

November 5, 11:00am - 12:00pm



Dawn Trautman, Manager of Smart Agriculture and Food Innovation, Alberta Innovates

Dawn is an agricultural economist and recently announced Nuffield 2020 Scholar. She works with Alberta Innovates as 'Manager, Smart Agriculture and Food Innovation' where her role involves program planning and delivery; and building relationships and partnerships with the agri-food industry, scientific community, and government stakeholders. Previously, Dawn was Director of Knowledge Translation at Livestock Gentec at the University of Alberta, where she was involved in knowledge transfer for practical applications in the livestock industry.

Developments in agriculture: What's so 'smart' about artificial intelligence?

Over the past five to seven years, a new set of practices utilizing information and communication technologies indicates that we are entering a digital revolution in agriculture, where connected sensors, the Internet of Things (IoT), autonomous vehicles, robots, and big data analytics will be essential in effectively feeding tomorrow's world. 'Smart' technologies are changing the way farming is done; these technologies allow producers to look beyond what the eye can see, by collecting non-traditional data and employing analytics to produce food that is both sustainable and profitable. Dawn will speak on recent developments in integrating artificial intelligence in agriculture, touching on how the newly federally supported Canadian Agri-Food Automation and Intelligence Network (CAAIN) fits into the space. Notably, CAAIN will help drive increased precision, productivity and premiums for Canada's agri-food market by linking techniques in artificial intelligence, advanced sensor technologies, hyperspectral imaging, and blockchain applications. The future of agriculture will be smart, connected, and digital, and it might well be closer than we think.



Dr. Ian Stavness, Department of Computer Science, University of Saskatchewan

Ian is an Associate Professor of Computer Science at the University of Saskatchewan. He leads the Deep Learning for Phenomics project at the Plant Phenotyping and Imaging Research Centre (P2IRC) at the University of Saskatchewan. He also directs the Biological Imaging & Graphics (BIG) lab focused on 3D modeling, image analysis and deep learning for biological and biomedical applications. His research directions target the emerging field of computational agriculture. He completed a post-doc at Stanford University with the NIH Center for Biomedical Computation and his PhD at the University of British Columbia

Imaging and Deep Learning in Smart Plant Breeding

Deep learning technology has the potential to transform many aspects of the Agri-food sector. Upstream from growers, deep learning approaches are already having an impact on crop breeding programs as drone imaging is being rapidly adopted to augment and enhance manual

assessment of crop traits in field trials. Extracting trait information from images of plants and crops remains a core challenge for the field. Deep learning approaches have shown promising initial results for meeting the challenge, particularly for outdoor images of plant and crops that are captured under highly variable conditions in terms of lighting, wind, and ground background. In this talk, I will discuss our efforts at the Plant Phenotyping and Imaging Research Center (P2IRC) in Saskatoon, Canada for collecting, organizing, and analyzing images of outdoor crop breeding fields. I will also provide some perspectives on how imaging and deep learning approaches developed for crop breeding can have an impact in other Agri-food areas.