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前沿资讯

1 .Machine learning helps determine health of soybean fields（机器学习有助于大豆耕地的健康状况）

简介： Using a combination of drones and machine learning techniques, researchers from The Ohio State University have recently developed a novel method for determining crop health and used it to create a new tool that may aid future farmers. Published in the journal Computers and Electronics in Agriculture, the study investigates using neural networks to help characterize a crop defoliation, or the widespread loss of leaves on a plant. This destruction can be caused by disease, stress, grazing animals, and more often by infestations of insects and other pests. If left unchecked, whole crop fields can end up damaged, drastically lowering an entire region's agricultural productivity. To combat this, researchers chose to analyze a cash crop considered to be one of the four staples of global agriculture: soybeans. Between August and September of 2020, Zichen Zhang, lead author of the study and a graduate student in computer science and engineering at Ohio State, used an Unmanned Aerial Vehicle (UAV), or a drone, to take aerial images of five soybean fields in Ohio. After cropping each UAV image into smaller images, the team eventually had more than 97,000 photos that they could label either healthy, or defoliated.

来源： EurekAlert

发布日期:2022-06-07

全文链接http://agri.ckcest.cn/file1/M00/03/33/CsgkOYb4S8yADD5XAAJIXZcCly0026.pdf

2 . Drone data provides early identification of southern rust in corn - Texas A&M AgriLife algorithms can help producers prevent economic damage（无人机数据提供了玉米南方锈病的早期识别—德州农工大学农业生命算法可以帮助生产者减少经济损失）

简介： Texas A&M AgriLife researchers discovered they can predict corn southern rust epidemic outbreaks by utilizing unmanned aerial systems, UAS, or drones, early enough to help prevent economic damage for growers. Outlining the work, the paper, "Phenomic Data-Facilitated Rust and Senescence Prediction in Maize Using Machine Learning Algorithms," was selected for publication by Scientific Reports recently. The lead author was Aaron DeSalvio, a Department of Soil and Crop Sciences graduate student in the Genetics and Genomics program at Texas A&M University. Leadership for the project was provided by Seth Murray, Ph.D., Texas A&M AgriLife Research corn breeder and Eugene Butler Endowed Chair in the Department of Soil and Crop Sciences, and Tom Isakeit, Ph.D., Texas A&M AgriLife Extension Service plant pathologist in the Department of Plant Pathology and Microbiology. Other contributors included post doctorate researcher Alper Adak, Ph.D., who helped analyze data, and Scott Wilde, Ph.D., who helped with drone flights.

来源： SeedQuest

发布日期:2022-05-31

全文链接:http://agri.ckcest.cn/file1/M00/10/05/CsgkOGKhosyAT0AXAAZEcMbkzbI878.pdf

3．Adama is using drone imagery analysis to bring more value to farmers（安道麦与Agremo联手推出了无人机航拍图像分析农业平台）

简介：每个农业从业者都清楚通过人工侦测获得可靠的田间分析信息所要面临的困难。种植者迫切需要缩小这一差距，即能够从田间获取可靠的信息，并将其转化为可操作的准确数据，同时减少对人的依赖性。为此，安道麦与领先的航拍图像分析供应商Agremo联手推出了无人机航拍图像分析农业平台“安道麦鹰眼”（ADAMA Eagle Eye）。安道麦鹰眼能够高精度采集农作物田间数据，以优化田间试验和示范地块的管理。该数字平台利用人工智能对无人机拍摄的图像进行分析，安道麦农学家和专家可藉此虚拟来到田间，收集三维图像、作物健康数据、记录田间试验的进展情况，从而使安道麦的产品开发和营销团队能够为全球的农业从业者和种植者提供更好的作物信息获取渠道。安道麦鹰眼系统的分析报告使人们无需揣测作物生长进程，极大地方便了安道麦团队和种植者更好地了解田间的情况。该软件从无人机地图中提取关于植物种群、杂草、胁迫、虫害、病害、干旱、田间可耕面积等关键信息，生成田间和作物报告。增加的数据层通过可视数据点提供重要的分析信息，帮助安道麦就在研产品开发项目作出更明智的决策。此外，该报告有助于与种植者展开更具针对性的讨论，从而得出最佳解决方案。

来源：AgroPage

发布日期:2022-05-31

全文链接:http://agri.ckcest.cn/file1/M00/10/05/CsgkOGKhnPWAOSI-AAIxht47AMs201.pdf

会议论文

1．IoT, Big Data, and Artificial Intelligence in Agriculture and Food Industry（农业与食品业中的物联网，大数据与人工智能）

简介：Internet of Things (IoT) results in a massive amount of streaming data, often referred to as “big data,” which brings new opportunities to monitor agricultural and food processes. Besides sensors, big data from social media is also becoming important for the food industry. In this review, we present an overview of IoT, big data, and artificial intelligence (AI), and their disruptive role in shaping the future of agri-food systems. Following an introduction to the fields of IoT, big data, and AI, we discuss the role of IoT and big data analysis in agriculture (including greenhouse monitoring, intelligent farm machines, and drone-based crop imaging), supply chain modernization, social media (for open innovation and sentiment analysis) in food industry, food quality assessment (using spectral methods and sensor fusion), and finally, food safety (using gene sequencing and blockchain-based digital traceability). A special emphasis is laid on the commercial status of applications and translational research outcomes.

来源：IEEE Internet of Things Journal

发布日期:2022-05-29

全文链接:http://agri.ckcest.cn/file1/M00/10/05/CsgkOGKhmduAXphOAA9WitYlAEg626.pdf

科技报告

1．EU tools to respond to natural disasters（欧盟自然灾害应对工具）

简介： This study provides an analysis and assessment of EU tools to respond to natural disasters. Particular attention is paid to the European Union Solidarity Fund and the potential synergies and overlaps with other EU instruments including the Emergency Aid Reserve, the EU Civil Protection Mechanism as well as Cohesion Policy. Also, the recent modifications to the EUSF including the extension to address major public health emergencies as well as the modifications linked to the 2021-2027 programming period are examined. Based on this assessment, policy recommendations are put forward.

来源： EU

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全文链接: http://agri.ckcest.cn/file1/M00/03/34/CsgkOYb4VGeAPx44ABnv4rU4EH8917.pdf