2019年第35期总202期

农牧业信息化专题

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2019年9月2日

前沿资讯

1. 英国电信在印度新建人工智能研究中心

简介：据《商业标准报》网站消息，2019年7月4日，电信巨头英国电信（BT）与印度科学学院（IISc）在班加罗尔启动新建英国电信印度研究中心(BTIRC)，聚焦下一代人工智能、移动通信和软件工程技术。该中心将加入英国电信在全球的合作研究网络，包括在北爱尔兰、中国、美国和阿联酋的研发中心，加快相关技术研发。英国驻班加罗尔副高专表示,印度已成为全球数据量最富有的国家之一,中心的成立将推动英印科技合作,在关键技术领域取得突破。英国电信是全球通信和人工智能研究的领导者之一，前20年在英国获得的人工智能相关专利量居英国企业之首。英国电信与印著名大学的研发合作广泛而深入。2018年，其与德里印度信息技术研究所（IIIT-Delhi）合作在古尔冈建设网络安全中心，聚焦弹性光网络和量子密钥分发技术。

来源：科技部

发布日期:2019-08-15

全文链接:

http://agri.ckcest.cn/file1/M00/0E/80/CsgkOF1l7ZaAMH1iAAPf2vdkpjw329.pdf

2. Agrix Tech helps African farmers tackle crop disease(Agrix Tech公司帮助非洲农民解决农作物病害问题)

简介：喀麦隆的一家创业公司Agrix Tech开发了一个平台，帮助非洲农民检测植物疾病。据Quartz Africa报道，总部位于雅温得的Agrix Tech公司一直在测试一个基于人工智能的平台，以帮助非洲农民从源头解决农作物病虫害问题。

化学和物理防治措施

该公司计划从2020年1月开始在非洲推出其平台，届时其商业版本将发布。该技术有助于检测植物病害，并提供化学和物理防治措施。

通过Agrix Tech，农民可以在手机上查询应用程序，扫描受影响的植物样本，然后找到解决方案。该应用程序以定制的非洲当地语言提供文本和语音识别技术。

人工智能库

Agrix Tech的创始人兼首席执行官Adamou Nchange Kouotou表示，这个平台有两点创新：一种是为没有人工智能团队的组织开发了移动应用程序，另一种是作为一个人工智能库，帮助开发者在应用程序中添加农作物疾病检测和诊断功能。Agrix技术已经经过一家著名的农业研究机构的测试和确认。据其创始人说，该创新的原型有99%的准确率。

一旦明年初推出商业化版本，他将能够检测出玉米、大米、甜椒、洋葱、番茄、爱尔兰土豆、辣椒、芒果、柠檬、西瓜、黄瓜、卷心菜、花生、柑橘、枣椰树等多种植物的疾病。

来源：Future Farming

发布日期:2019-08-14

全文链接:

http://agri.ckcest.cn/file1/M00/0E/7F/CsgkOF1eMa2AeMOfAAROeIwIbdU826.pdf

学术文献

1. A high-resolution, multimodal data set for agricultural robotics: A Ladybird's-eye view of Brassica（农业机器人的高分辨率、多模态数据集：从Ladybird视角观察芸苔属植物）

简介：This article presents an agricultural data set collected by Ladybird, an autonomous field robot designed at the Australian Centre for Field Robotics. The data set contains weekly scans of cauliflower and broccoli (*Brassica oleracea*) covering a 10 week growth cycle from transplant to harvest. The data set includes ground truth; physical characteristics of the crop; environmental data collected by a weather station and a soil sensor network; and scans of the crop performed by Ladybird, which include stereo color, thermal and hyperspectral imagery. The layout of the farm and data collection methodology are described. A description of Ladybird's capabilities and sensors are provided. Benchmark results are provided to illustrate the contents of the data set and how it can be processed. The hyperspectral data are compiled into hypercubes and the pixels are classified into crop, weed, or soil. An object detector is applied to the color imagery to locate the crop. Our intention in releasing the data set is to facilitate robotics and machine learning research activity in agriculture. The data set can be downloaded from .

来源：JOURNAL OF FIELD ROBOTICS

发布日期:2019-07-11

全文链接:

http://agri.ckcest.cn/file1/M00/0E/7F/CsgkOF1eMI-AVZ2EAJ1LZSikYXc178.pdf

2. Design and field evaluation of a ground robot for high-throughput phenotyping of energy sorghum（能源高粱高通量表型地面机器人的设计与现场评价）

简介：This article describes the design and field evaluation of a low-cost, high-throughput phenotyping robot for energy sorghum for use in biofuel production. High-throughput phenotyping approaches have been used in isolated growth chambers or greenhouses, but there is a growing need for field-based, precision agriculture techniques to measure large quantities of plants at high spatial and temporal resolutions throughout a growing season. A low-cost, tracked mobile robot was developed to collect phenotypic data for individual plants and tested on two separate energy sorghum fields in Central Illinois during summer 2016. Stereo imaging techniques determined plant height, and a depth sensor measured stem width near the base of the plant. A data capture rate of 0.4ha, bi-weekly, was demonstrated for platform robustness consistent with various environmental conditions and crop yield modeling needs, and formative human-robot interaction observations were made during the field trials to address usability. This work is of interest to researchers and practitioners advancing the field of plant breeding because it demonstrates a new phenotyping platform that can measure individual plant architecture traits accurately (absolute measurement error at 15% for plant height and 13% for stem width) over large areas at a sub-daily frequency;

furthermore, the design of this platform can be extended for phenotyping applications in maize or other agricultural row crops.

来源：PRECISION AGRICULTURE

发布日期:2018-09-15

全文链接:

http://agri.ckcest.cn/file1/M00/0E/7F/CsgkOF1eB7-AGqRxADJpcBauFXI925.pdf

相关专利

1．FIELD MEASUREMENT OF SOIL ELEMENT CONCENTRATION(土壤元素浓度的现场测量)

简介：In an embodiment, a system for measuring soil element concentration in a field in real time is disclosed. The system comprises an extraction apparatus coupled to a mobility component configured to move the system in the agricultural field. The extraction apparatus configured to receive a plurality of soil samples successively from a soil probe coupled to the mobility component, when the mobility component is operating. The extraction apparatus containing an extractant solution that is a solvent of the soil samples. In addition, the extraction apparatus comprising a mixer that is configured to mix the soil samples with the extractant solution, thereby forming a solution mix. The system also comprises a chemical sensor coupled to the extraction apparatus, the chemical sensor configured to measure a concentration level of a soil element in the solution mix. Furthermore, the system comprises a processor coupled to the chemical sensor, the processor configured to calculate a concentration level of the soil element in each of the plurality of soil samples after the soil sample is received by the extraction apparatus and before a successive soil sample is received by the extraction apparatus.

来源：世界知识产权组织

发布日期:2019-04-11

全文链接:

http://agri.ckcest.cn/file1/M00/0E/80/CsgkOF1l_kSAXOpAACzAkZ09xnA168.pdf

2．一种营养液钾、钠离子浓度检测装置及检测方法

简介：本发明提供了一种营养液钾、钠离子浓度检测装置及检测方法，所述装置包括钾离子选择电极、钠离子选择电极、参比电极、单片机、温度传感器和触摸显示屏。通过钾离子选择电极、钠离子选择电极和参比电极将营养液中的钾、钠离子浓度转化成电位信号，单片机实时采集离子选择电极的瞬态响应信号和稳态响应信号，采用CART树回归算法进行交叉敏感校正，同时温度传感器将检测营养液的温度转化成数字信号，输入到单片机中进行温度补偿，得出营养液中的钾、钠离子浓度，将结果进行显示。所述的检测装置具有成本低，性能稳定，精度高、操作方便简单、自动交叉敏感校正和温度补偿等优点。其校正方法能够有效地降低钾、钠离子选择电极的检测误差。

来源：国家知识产权局

发布日期:2018-11-09

全文链接: