

06 核心技术 Core Technology

自动二值化 Automatic binarization

利用深度神经网络对图像进行前景背景分割，平滑分割谷物边缘，精准定位待分析谷物。
Use deep neural network to segment the foreground and background of the image, smoothly segment the grain edge, and accurately locate the grain to be analyzed.

粘连物料分割算法 Adhesion material segmentation algorithm

深度神经网络对粘连的谷物进行实例分割，形成独立且完整的谷物，对其进行分析、分类。
Deep neural network segments the adhering grains to form independent and complete grains, which are analyzed and classified.

多属性识别 Multi-attribute recognition

采用轻量级神经网络，并集成了半监督多属性学习方法，用户对待分析谷物进行少量样本标注，即可更新数据模型，对谷物进行快速、高精度分析。
It adopts a lightweight neural network and integrates a semi-supervised multi-attribute learning method. The user can label a small number of samples of the grain to be analyzed, and then the data model can be updated to perform fast and high-precision analysis of the grain.

07 应用场景 Application scenarios

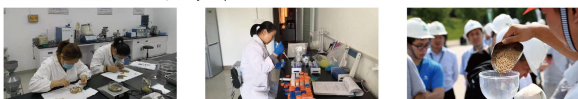
粮食加工厂 Grain processing plant



粮库、粮站 Grain depot, grain station



粮食质量检测站 Grain Quality Inspection Station



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AI·视觉检测设备 谷物品质分析仪

AI Visual Inspection System Grain Quality Analyzer

安徽省科亿信息科技有限公司
Anhui Key Information Technology Co., Ltd.

01 公司简介 Company Profile

安徽省科亿信息科技有限公司，是一家专注于AI技术研发及产品落地的国家级高新技术企业，为各细分行业提供AI视觉成像、算法算力及自动控制等整体解决方案。

公司依托于中国科学技术大学模式识别重点实验室，组建了一支由7名博士带队，集光、机、电、算、软于一体的高端研发团队，通过在各细分行业的工程实践，打造KVS-AI软硬件平台，让AI技术切实转换为真正的生产力。

Anhui Key Information Technology Co., Ltd. is a national high-tech enterprise focusing on AI technology research and development and product implementation. It provides overall solutions such as AI visual imaging, algorithm computing power and automatic control for various sub-industries.

Relying on the Key Laboratory of Pattern Recognition of the University of Science and Technology of China, the company has established a high-end R&D team led by 7 doctors, integrating optics, mechanics, electricity, computing and software. Build a KVS-AI software and hardware platform, so that AI technology can be transformed into real productivity.

合作伙伴 1000+ Partners 1000+

知识产权 30+ Intellectual Property 30+

科研团队 40+ Scientific Research Team 40+

企业荣誉 10+ Enterprise Honor 10+

02 人工检测的问题 Application Background

检测人员对标准的执行偏差大，管理难度大。

The inspection personnel have a large deviation in the implementation of the standard, and the management is difficult.

不同检测人员的检测标准存在主观差异化，一致性低。

There are subjective differences in the detection standards of different inspectors, and the consistency is low.

长时间的工作会导致检测人员视觉疲劳，易出现误检、漏检。

Long-term work will cause visual fatigue of inspectors, which is prone to false inspections and missed inspections.

检测的过程无法准确记录，可追溯性低。

The detection process cannot be accurately recorded, and the traceability is low.

03 谷物品质分析仪 Grain Quality Analyzer

KVS-G系列谷物品质分析仪由视觉系统、软件系统等模块结构组成，当谷物进入相机视野中，对谷物进行拍摄，通过配准算法，综合得到一颗完整谷物的特性，利用人工智能算法进行属性识别，判断是否存在病斑、生霉、生芽、破损、虫蚀等问题。

KVS-G series grain quality analyzer is composed of visual system, software system and other module structures. When the grain enters the field of view of the camera, the grain is photographed, and the characteristics of a complete grain are obtained through the registration algorithm. Attribute identification to determine whether there are problems such as disease spots, mildew, germination, damage, and insect-eaten.



AI算法，精准定位
AI algorithm- precise positioning
精准定位谷物属性，对谷物进行分类、称重处理
Accurately locate grain attributes, classify and weigh grains

3分钟分析，易操作
3 minutes analysis-easy to operate
3分钟内完成符合国标样品数量要求的检测，简单易操作
Complete the test within 3 minutes, and meet the requirements of the number of samples in the national standard, which is simple and easy to operate

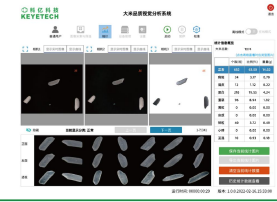
04 技术参数 Technical parameter

参数 (Inspect)	大米 (Rice)	玉米 (Corn)	小麦 (Wheat)
型号 (Model No)	KVS-GR1 KVS-GR3 KVS-GR7	KVS-GC1 KVS-GC3 KVS-GC7	KVS-GW1 KVS-GW3 KVS-GW7
检测速度 (Inspect Speed) 单出口为例 (Example of a single exit)	15-20粒/秒 15-20pcs/sec	8-12粒/秒 8-12pcs/sec	15-20粒/秒 15-20pcs/sec
电压 (Voltage)	220V±10%，50Hz		
功率 (Current)	1000-1500W		
重量 (Weight)	110KG		
尺寸 (Size)	800mm*600mm*600mm		
环境温度 (Ambient temperature)	10~40℃		
环境湿度 (Environment humidity)	相对湿度≤85%		

05 应用范围 Scope of application

按照国标分类统计，将不同类型分开并称重（选配）
According to the national standard classification statistics, different types are separated and weighed (optional)

大米分选类别 Rice Sorting Category



玉米分选类别 Corn Sorting Category



小麦分选类别 Wheat sorting categories



其他：瓜子、松子、巴旦木、咖啡豆等可平穩放置的农产品品质分析
Others: Quality analysis of agricultural products such as melon seeds, pine nuts, almonds, and coffee beans that can be placed stably

