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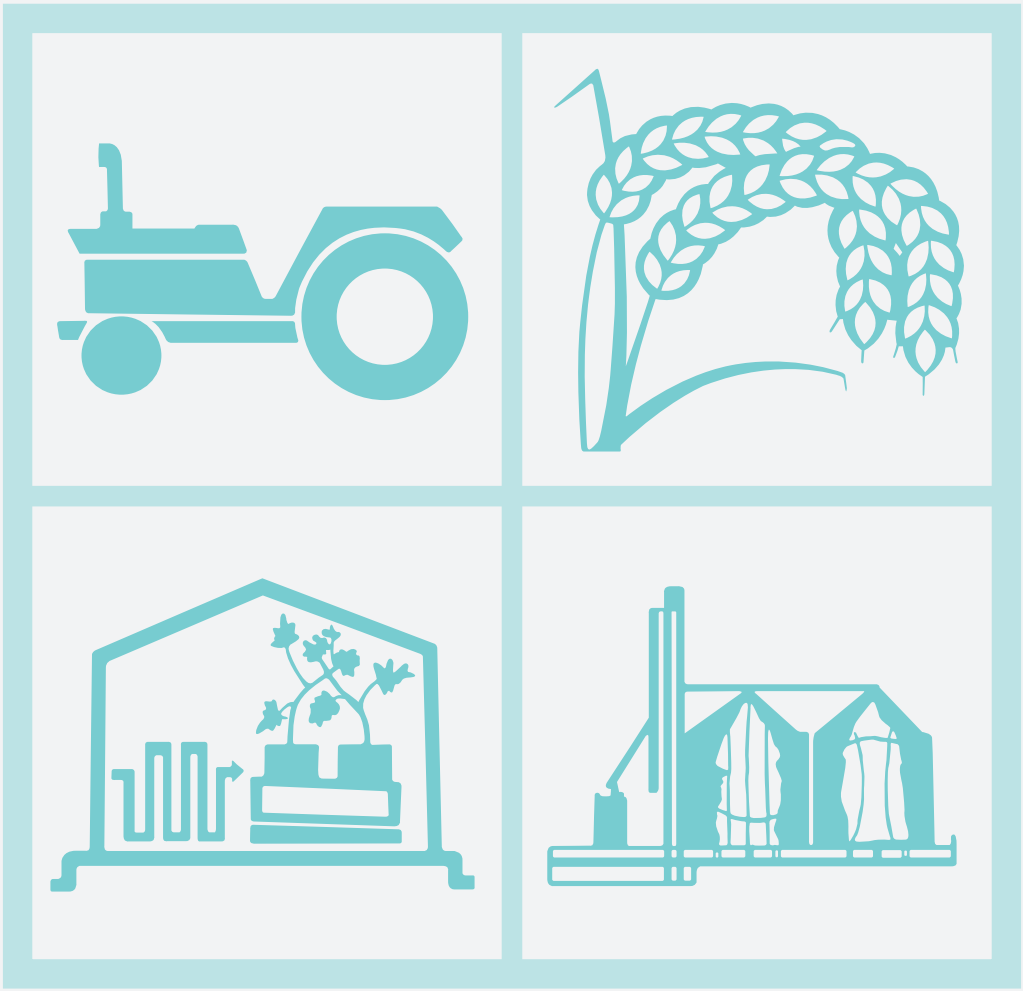

주최

(사) 한국농업기계학회
KSAM Korean Society for Agricultural Machinery

스마트팜 연구센터
Smart Farm Research Center

BAY 2 ▶인공지능 및 정보처리 I

■ 좌장 : 박두산 교수 (경북대학교) ■

9:00~9:12	65	**Automatic Yield Mapping of Chinese Cabbage and White Radish using Crop Identification Algorithm with UAV RGB Images** Dong-Wook Kim(Seoul National University), Gyujin Jang, Hak-Jin Kim*
9:12~9:24	66	**A multi-task model for estimating severity and classifying strawberry diseases on leaves using multi-class Unet** Nguyen Kim Dung(Chonnam National University), Yeong Soo Choi*
9:24~9:36	67	**Patch-YOLO: Counting Small-Sized Broilers in Large-Scale Cage-Free Broiler Houses** Do-Hwan kim(Chonnam National University), Ömer Faruk İnce, Jiwoong Lee, Kyeong-Hwan Lee*
9:36~9:48	68	**RGB 영상 및 딥러닝 영상분할 모델을 이용한 사과 과실 표면결함 검출 기술 개발** Development of a defect detection technology on apple fruits using RGB images and deep learning semantic segmentation models 류지원(서울대학교), 박성민, 김상연, 김응찬, 김성제, 신상우, 김기석*
9:48~10:00	69	**WeedNet-v7: A Dense Multi-Scale Weed Detection Framework** Zhewang Zhang(Chonnam National University), Omer Faruk Ince, Kyeong-Hwan Lee*
10:00~10:12	70	**과실의 실시간 기하학적 정보 계측을 위한 3차원 영상 측정 시스템 및 분석기술 개발** Development of Real-time 3D Imaging System and Analysis Techniques for Measurement of Fruit Morphology 홍석주(농촌진흥청), 이아영*, 김진세
10:12~10:24	71	**Potato Disease Identification Using Weather Data and Image Data.** Nishadi Prasangini Sandaraja Kankanamalage(Seoul National University), Hak-Jin Kim*
10:24~10:36	72	**시간분해능 광열분광법을 이용한 벼 도열병 진단** Diagnosis of Rice Blast Disease Using Time-Resolved Photothermal Spectroscopy 노승우(서울대학교), 박성민, 김응찬, 이창협, 김규민, 장하린, 김기석*
10:36~10:48	73	**딥러닝 기반의 의미론적 분할을 이용한 감수지의 도포율 평가** Evaluation of spray ratio from water sensitive paper using semantic segmentation based on deep learning 성백겸(충남대학교), 강승우, 조수현, 이대현*, 이춘구, 유승화
10:48~11:00	74	**딥러닝을 이용한 소 유방염 검출 기술 개발** Mastitis detection of dairy cow using deep learning 조수현(충남대학교), 강승우, 성백겸, 이대현*, 이민경, 서성원
11:00~11:10		**Break Time**

Patch-YOLO: Counting Small-Sized Broilers in Large-Scale Cage-Free Broiler Houses

Do-Hwan kim[1], Ömer Faruk İnce[3], Jiwoong Lee[2], Kyeong-Hwan Lee[1,3,4*]

[1]Department of Convergence Biosystems Engineering, Chonnam National University, Gwangju, Korea
[2]Division of Animal Science, Chonnam National University, Gwangju, Korea
[3]Agricultural Automation Research Center, Chonnam National University, Gwangju, Korea
[4]BK21 Interdisciplinary Program in IT–Bio Convergence System, Chonnam National University, Gwangju, Korea

Abstract

In large broiler houses, using PTZ cameras for automatic broiler counting is challenging. Though zooming with PTZ cameras and using detection algorithms like YOLO can help recognize small broilers, it demands more shots and is inefficient for counting actively moving broilers. This study introduces the Patch-YOLO algorithm, designed for the efficient detection of small-sized broilers from images captured at maximum Field of View (FOV), without utilizing the zoom function. It operates by segmenting the input image into multiple patches and independently applying YOLO to each segment, guaranteeing precise detection of smaller broilers. The proposed approach was evaluated using images captured by CCTV installed on a commercial broiler farm, and the results showed that the approach can detect broilers with the mean average precision(mAP) of 97% when IOU threshold was set to 0.6. The proposed approach contributes to a comprehensive and improved detection of broilers even in expansive and large-scale settings.

Keywords

Broiler counting, Small-sized object detection, Patch-YOLO

Acknowledgement

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*Corresponding author: Kyeong-Hwan Lee (khlee@jnu.ac.kr)