

Endai Huang

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• Education Background •

City University of Hong Kong , Ph.D, Computer Science, Hong Kong SAR, China	2018.09-2023.10
Deep learning, computer vision, animal detection under occlusion.	
Dual supervisors under Dept. of Computer Science and College of Veterinary Medicine & Life Sciences	
Zhejiang University , B.E., Agricultural Engineering, Hangzhou, China	2014.09-2018.06
Agricultural robot, biosensors, crop prediction, and agriculture big data in supply chain.	

• Work Experience •

Postdoctoral Fellow, The Chinese University of Hong Kong , Hong Kong	2023.10-Now
Machine Learning with Material Science	
Research Assistant, City University of Hong Kong , Hong Kong	2021.08-2023.07
Statistical modeling and prediction of feral pigeon in Hong Kong.	
Teaching Assistant, City University of Hong Kong , Hong Kong	2018.09-2022.06
GE2340 Artificial intelligence, CS2115 Computer Organization, CS3334 Data structure, and CS6491 Topics in Optimization and its Applications in Computer Science.	
Internship, Tencent AI Lab , Shenzhen	2018.08-2018.10
Rumor detection algorithm in social network.	

• Publication •

(First author: 4, Co-author: 6)

- [**Journal, IF=16.8**]Multi-objective optimization for sustainable renewable jet fuel production: A case study of corn stover based supply chain system in Midwestern US. *Renewable and Sustainable Energy Reviews* (2019).
Endai Huang¹, Xiaolei Zhang¹, Luis Rodriguez, Madhu Khanna, Sierk de Jong, K.C. Ting, Yibin Ying, Tao Lin*
- [**Journal, IF=8.3**]Center clustering network improves piglet counting under occlusion. *Computers and Electronics in Agriculture* (2021).
Endai Huang, Axiu Mao, Haiming Gan, Maria C. Ceballos, Thomas D. Parsons, Yueju Xue, Kai Liu*
- [**Journal, IF=8.3**]Automated detection and analysis of social behaviors among preweaning piglets using key point-based spatial and temporal features. *Computers and Electronics in Agriculture* (2021).
Haiming Gan, Mingqiang Ou, Endai Huang, Chengguo Xu, Shiqing Li, Jiping Li, Kai Liu, Yueju Xue*
- [**Journal, IF=3.8**]Cross-Modality Interaction Network for Equine Activity Recognition Using Imbalanced Multi-Modal Data. *Sensors* (2021).
Axiu Mao, Endai Huang, Haiming Gan, Rebecca S. V. Parkes, Weitao Xu, Kai Liu*
- [**Journal, IF=3.2**]FedAAR: A Novel Federated Learning Framework for Animal Activity Recognition with Wearable Sensors. *Animals* (2022).
Axiu Mao, Endai Huang, Haiming Gan, Kai Liu*
- [**Journal, IF=8.3**]A Semi-Supervised Generative Adversarial Network for Amodal Instance Segmentation of Piglets in Farrowing Pens. *Computers and Electronics in Agriculture* (2023).
Endai Huang, Zheng He, Axiu Mao, Maria C. Ceballos, Thomas D. Parsons, Kai Liu*
- [**Journal, IF=8.3**]Occlusion-Resistant Instance Segmentation of Piglets in Farrowing Pens Using Center Clustering Network. *Computers and Electronics in Agriculture* (2023).
Endai Huang, Axiu Mao, Junhui Hou, Yongjian Wu, Weitao Xu, Maria C. Ceballos, Thomas D. Parsons, Kai Liu
- [**Journal, IF=8.3**]Deep learning-based animal activity recognition with wearable sensors: Overview, challenges, and future directions. *Computers and Electronics in Agriculture* (2023).
Axiu Mao, Endai Huang, Xiaoshuai Wang, Kai Liu*

●**[Journal, IF=8.3]** A Teacher-to-student Information Recovery Method Toward Energy-efficient Animal Activity Recognition at Low Sampling Rates. *Computers and Electronics in Agriculture* (2023).

Axiu Mao, Meilu Zhu, Endai Huang, Xi Yao, Kai Liu*

●**[Journal, IF=3.2]** Automatic Detection of Feral Pigeons in Urban Environments Using Deep Learning. *Animals* (2024).

Zhaojin Guo, Zheng He, Li Lyu, Axiu Mao, Endai Huang, Kai Liu*

●**[Others]**Oxygenation device based on ultrasonic high-frequency vibration. CN. Patent: ZL201710374591.2.

Songmin Zhu, Endai Huang, Luoyi Jin, Xiaoyue Xu, Yutian Shen.

●**[Others]**Multiple and Portable Measuring Instrument Control Software (Model 2000 Multimeter) V1.0 [CP]. Software Copyright, RN: 2017SR568108, Copyright Protection Center of China, 2017-10-16

Zunzhong Ye, Endai Huang, Xiaoyue Xu, Yibin Ying

• Presentation •

●**[Oral+Conference paper]**Occlusion Resistant Spatial Analysis of Pig Distribution Pattern in Farrowing Pens Using Center Clustering Network. *In 10th European Conference on Precision Livestock Farming (ECPLF 2022)*

Endai Huang, Axiu Mao, Haiming Gan, Kai Liu*

●**[Oral+Conference paper]**Capacity Limit of Deep Learning Methods on Scenarios of Pigs in Farrowing Pen under Occlusion. *In 2021 ASABE Annual International Virtual Meeting*.

Endai Huang, Axiu Mao, Maria C. Ceballos, Thomas D. Parsons, Kai Liu*

●**[Oral+Conference paper]**A Key Frame Selection Method for Creating Deep Learning Training Set in Animal Research Involving Time-Series Video Data. *In 6th International Symposium on Animal Environment and Welfare (ISAEW 2021)*

Endai Huang, Axiu Mao, Haiming Gan, Kai Liu*

●**[Oral+Conference paper]**Deep learning-based assessment of laying-hen feather conditions using color and thermal images. *In 2nd Asian Conference on Precision Livestock Farming (ACPLF2020)*

Endai Huang, Axiu Mao, Kai Liu*, Yueju Xue

●**[Poster]**Center clustering network improves piglet counting under occlusion. *CV4Animals Workshop, CVPR (2022)*

Endai Huang, Axiu Mao, Haiming Gan, Maria C. Ceballos, Thomas D. Parsons, Yueju Xue, Kai Liu*

●**[Poster]**Occlusion-Resistant Instance Segmentation of Piglets in Farrowing Pens Using Center Clustering Network. *CV4Animals Workshop, CVPR (2022)*

Endai Huang, Axiu Mao, Yongjian Wu, Haiming Gan, Maria Ceballos, Thomas Parsons, Junhui Hou, Kai Liu*

• Prize & Award •

●Championship of 2016 ASABE Student Robotic Competition

●2nd Place in 2021 AOC Student Presentation Competition, Association of Overseas Chinese Agricultural Biological Food Engineers

●Silver Award of The 8th China International College Students' 'Internet +' Innovation and Entrepreneurship Competition, 2022

• Others •

●Director of New Media office, IEEE CityU Student Branch, 2022-2023

●Reviewer of journal IEEE Transactions on Network, Computers and Electronics in Agriculture, and International Journal of Agricultural and Biological Engineering



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· 教育背景 ·

香港城市大学, 计算机专业, 博士, 香港	2018.09-2023.10
深度学习, 计算机视觉, 动物图像检测与分割; 计算机学院与动物医学及生命科学院双导师培养	
浙江大学, 农业工程专业, 本科, 杭州	2014.09-2018.06
农业机器人, 生物传感器, 农业大数据——生物燃料供应链优化, 农作物产量建模	

· 工作经历 ·

博士后, 香港中文大学, 香港	2023.10-至今
机器学习与材料科学交叉学科	
科研助理, 香港城市大学, 香港	2021.08-2023.07
参与香港渔护署 (AFCD) 香港野鸽避孕药计划的统计建模与预测	
教学助理, 香港城市大学, 香港	2018.09-2022.06
GE2340 人工智能, CS2115 计算机组成, CS3334 数据结构, CS6491 计算机科学中的优化与应用	
机器学习中心员工, 腾讯 AI Lab, 深圳	2018.08-2018.10
社交网络中的谣言检测, 图论研究	

· 发表物 ·

(一作 4 篇, 共同作者 6 篇)

●[期刊, IF=16.8]可持续可再生航空燃料生产的多目标优化: 基于玉米秸秆的美国中西部供应链系统的案例研究。 *Renewable and Sustainable Energy Reviews* (2019).

[Endai Huang](#)¹, [Xiaolei Zhang](#)¹, [Luis Rodriguez](#), [Madhu Khanna](#), [Sierk de Jong](#), [K.C. Ting](#), [Yibin Ying](#), [Tao Lin](#)*

●[期刊, IF=8.3]中心聚类网络提高遮挡情况下的小猪计数能力。 *Computers and Electronics in Agriculture* (2021).

[Endai Huang](#), [Axiu Mao](#), [Haiming Gan](#), [Maria C. Ceballos](#), [Thomas D. Parsons](#), [Yueju Xue](#), [Kai Liu](#)*

●[期刊, IF=8.3]利用基于关键点的时间和空间特征对断奶前仔猪的社会行为进行自动检测和分析。 *Computers and Electronics in Agriculture* (2021).

[Haiming Gan](#), [Mingqiang Ou](#), [Endai Huang](#), [Chengguo Xu](#), [Shiqing Li](#), [Jiping Li](#), [Kai Liu](#), [Yueju Xue](#)*

●[期刊, IF=3.8]利用不平衡的多模态数据进行马匹活动识别的跨模态交互网络。 *Sensors* (2021).

[Axiu Mao](#), [Endai Huang](#), [Haiming Gan](#), [Rebecca S. V. Parkes](#), [Weitao Xu](#), [Kai Liu](#)*

●[期刊, IF=3.2]FedAAR: 利用可穿戴传感器进行动物活动识别的新型联合学习框架。 *Animals* (2022).

[Axiu Mao](#), [Endai Huang](#), [Haiming Gan](#), [Kai Liu](#)*

●[期刊, IF=8.3]一种用于对分娩栏中的仔猪的非模态实例分割的半监督生成对抗网络。 *Computers and Electronics in Agriculture* (2023).

[Endai Huang](#), [Zheng He](#), [Axiu Mao](#), [Maria C. Ceballos](#), [Thomas D. Parsons](#), [Kai Liu](#)*

●[期刊, IF=8.3]利用中心聚类网络对分娩栏内的小猪进行抗遮挡实例分割。 *Computers and Electronics in Agriculture* (2023).

[Endai Huang](#), [Axiu Mao](#), [Junhui Hou](#), [Yongjian Wu](#), [Weitao Xu](#), [Maria C. Ceballos](#), [Thomas D. Parsons](#), [Kai Liu](#)

●[期刊, IF=8.3]基于深度学习的可穿戴传感器的动物活动识别: 概述、挑战和未来方向。 *Computers and Electronics in Agriculture* (2023).

[Axiu Mao](#), [Endai Huang](#), [Xiaoshuai Wang](#), [Kai Liu](#)*

●[期刊, IF=8.3]一种用于低采样率下的高能效动物活动识别的教师到学生信息恢复法。 *Computers and*

Electronics in Agriculture (2023).

Axiu Mao, Meilu Zhu, Endai Huang, Xi Yao, Kai Liu*

●[期刊, IF=3.2]利用深度学习自动检测城市环境中的野鸽子. *Animals (2024).*

Zhaojin Guo, Zheng He, Li Lyu, Axiu Mao, Endai Huang, Kai Liu*

●[专利]一种基于超声波高频振动的增氧装置。国家发明专利: ZL 201710374591.2

朱松明, 黄恩待, 金洛熠, 徐潇越, 沈宇恬

●[其他]多功能便携式测量仪器操控软件 (简称: Model 2000 Multimeter) V1.0。软件著作权:

2017SR568108, 2017-10-16

叶尊忠, 黄恩待, 徐潇越, 应义斌

· 报告与展示 ·

●[口头报告+会议论文]利用中心聚类网络对产房中的猪群分布模式进行抗遮挡的空间分析。第十届欧洲精准畜牧业会议 (ECPLF 2022)

Endai Huang, Axiu Mao, Haiming Gan, Kai Liu*

●[口头报告+会议论文]深度学习方法在遮挡环境下猪舍场景中的能力限制。2021年ASABE国际年度会议 (ASABE AIM 2021)

Endai Huang, Axiu Mao, Maria C. Ceballos, Thomas D. Parsons, Kai Liu*

●[口头报告+会议论文]在涉及时间序列视频数据的动物研究中创建深度学习训练集的关键帧选择方法。第六届动物环境与福利国际研讨会 (ISAEW 2021)

Endai Huang, Axiu Mao, Haiming Gan, Kai Liu*

●[口头报告+会议论文]基于深度学习的彩色和热图像对产蛋鸡羽毛状况的评估。第二届亚洲精准畜牧业会议 (ACPLF2020)

Endai Huang, Axiu Mao, Kai Liu*, Yueju Xue

●[海报展示]中心聚类网络提高了遮挡情况下的小猪计数能力。CV4Animals Workshop, CVPR (2022)

Endai Huang, Axiu Mao, Haiming Gan, Maria C. Ceballos, Thomas D. Parsons, Yueju Xue, Kai Liu*

●[海报展示]利用中心聚类网络对产房内的小猪进行抗遮挡实例分割。CV4Animals Workshop, CVPR (2022)

Endai Huang, Axiu Mao, Yongjian Wu, Haiming Gan, Maria Ceballos, Thomas Parsons, Junhui Hou, Kai Liu*

· 荣誉与奖项 ·

●2016年美国农业与生物工程师学会 (ASABE) 学生机器人设计竞赛冠军

●2021年海外华人农业、生物与食品工程师协会 AOC 学生展示竞赛第二名

●2022年第八届中国国际“互联网+”大学生创新创业大赛银奖

· 其他 ·

●IEEE 香港城市大学学生分会, 新媒体办公室主任

2022-2023

●担任 IEEE Transactions on Network, Computers and Electronics in Agriculture 和 International Journal of Agricultural and Biological Engineering 等期刊审稿人



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