JAAS 江苏省农业科学院

智慧农业创新团队

南农林肯联合培养交流汇报

报 告 人：戚超

2026年1月15日

江苏省农业科学院农业信息研究所

南京信息工程大学自动化学院

个人申请情况

国家留学基金管理委员会
CHINA SCHOLARSHIP COUNCIL

贺信

戚超先生：

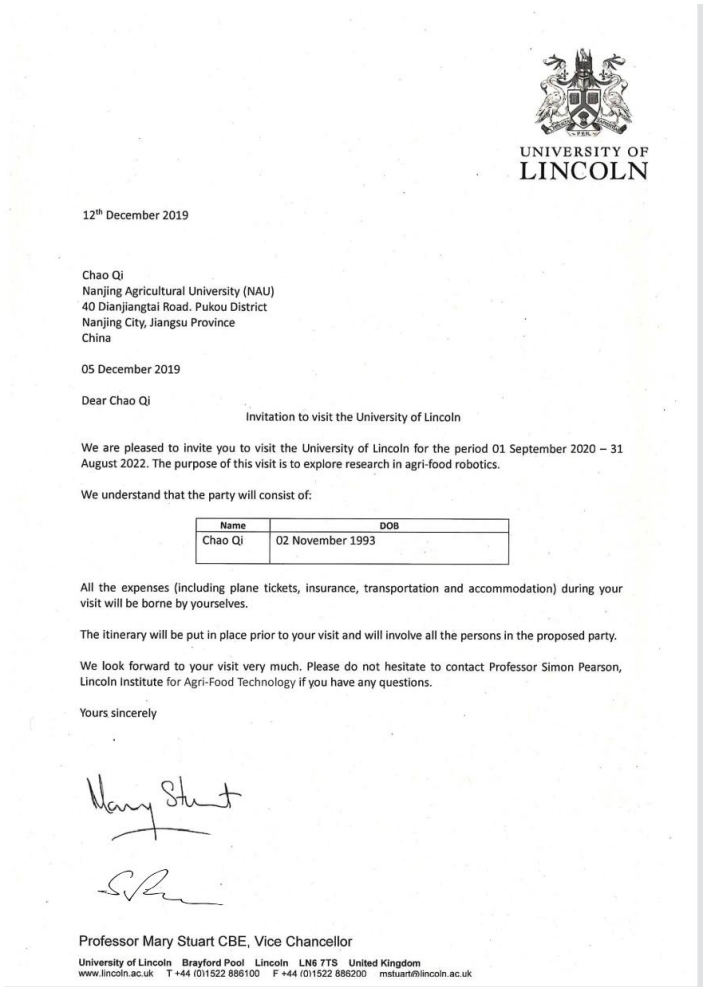
恭喜您通过专家评审，获得国家公派出国留学资格！

We are happy to tell you that you have been awarded the Chinese Government Scholarship to sponser your upcoming study abroad.Congratulations!

国家留学基金管理委员会
二〇二〇年八月

CSC NO. 202006850078

CSC祝贺信



UNIVERSITY OF LINCOLN

12th December 2019

Chao Qi
Nanjing Agricultural University (NAU)
40 Dianjiangtai Road. Pukou District
Nanjing City, Jiangsu Province
China

05 December 2019

Dear Chao Qi

Invitation to visit the University of Lincoln

We are pleased to invite you to visit the University of Lincoln for the period 01 September 2020 – 31 August 2022. The purpose of this visit is to explore research in agri-food robotics.

We understand that the party will consist of:

Name	DOB
Chao Qi	02 November 1993

All the expenses (including plane tickets, insurance, transportation and accommodation) during your visit will be borne by yourselves.

The itinerary will be put in place prior to your visit and will involve all the persons in the proposed party.

We look forward to your visit very much. Please do not hesitate to contact Professor Simon Pearson, Lincoln Institute for Agri-Food Technology if you have any questions.

Yours sincerely

Professor Mary Stuart CBE, Vice Chancellor

University of Lincoln Brayford Pool Lincoln LN6 7TS United Kingdom
www.lincoln.ac.uk T +44 (0)1522 886100 F +44 (0)1522 886200 mstuart@lincoln.ac.uk

林肯大学邀请函

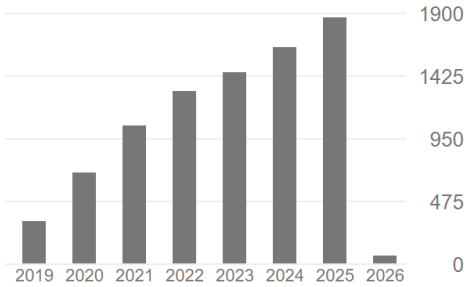
2019年CSC申请

外导情况

Simon Pearson教授
林肯农业食品技术研究所所长

引用次数 查看全部

	总计	2021 年至今
引用	10199	7417
h 指数	46	30
i10 指数	103	69



Professor Simon Pearson MIAgrE, FRSB,

Professor in Agri Food Technology

Lincoln Institute of Agri-Food Technology, The University of Lincoln, Brayford Pool, Lincoln, LN6 7TS

Address:. 26 Jul 1966
Tel: 07818 016782 **e-mail** spearson@lincoln.ac.uk

Education: 1984-1988: BSc (Hons) Horticulture (1st), University of Reading
1988-1992: PhD in Crop Forecasting, University of Reading

Research Career: 1993-1998: Lecturer in Horticulture, University of Reading
2015-present Founding Director, The Lincoln Institute of Agri Food Technology, The University of Lincoln

Industry Career: 1998-2005: Produce Technologist for Marks and Spencer plc
2005-2014: Managing Director (2013/ 14) of Winchester Growers Ltd (£50m turnover, 900 FTE)

Professor Simon Pearson is the Founding Director of the Lincoln Institute of Agri Food Technology (LIAT). LIAT has facilitated over £24m of cross disciplinary research over the last 2 years covering a wide range of topics from agri robotics to food microbiology and energy systems. Key note speaker at the Nobel Prize Dialogue Meeting on the Future of Food, Tokyo, 2018 and STS Forum 2018/19.

Key LIAT Grants:

- **Lincoln Agri Robotics (£6.4M Research England). UoL (Pearson Academic PI)**
- **AgriForwards CDT (£6.9M EPSRC CDT). UoL (Pearson Co-I), *Cambridge and UEA***
- **CERES Ag Tech Fund (£4.78m, HEFCE CCF). UoL (Pearson UoL PI), *Cambridge, UEA, Reading and Hertford.***
- **The Internet of Food Things. (EPSRC £1.18m). *UoL, UEA, Southampton, Surrey and Open.* (Pearson PI, Parr, Frey, Zisman, Maull).**
- **Mushroom Robo- Pict- Development of an autonomous mushroom picking robot (IUK £495K, £118K to Lincoln). *Littleport Mushrooms, Stelram, ABB.* (Pearson, B, Al-Diri, G. Nuemann).**
- **Autonomous robots to support fruit picking (IUK £1.25m, £363K to Lincoln). *CBS Robotics, Berry Gardens*> (Pearson, Hanheide, Cielniak, From).**
- **3D Vision-based Crop-Weed Discrimination for Automated Weeding Operations (IUK £140k, £86K to UoL). *Garford Farm Machinery.* (Cielniak, Duckett, Pearson).**
- **IoT applications for Dynamic Energy Control of Food Refrigeration Systems (IUK £1.1m to UoL of £5m total, Innovate UK, Successfully through EOI stage). *Tesco plc, IMS Ltd, UoL (Pearson PI, C. Bingham, A. Zolatas, R. Bicketon, J. Chen, Y Zhang), FRPERC, Visiting Professor Duncan Botting (Imperial / Strathclyde).***
- **A review of the application of IoT for domestic refrigeration systems. *Food Standards Agency / EPSRC ITaaU program (Pearson/ FRPERC Grimsby).***
- **3D Vision-assisted Robotic Harvesting of Broccoli (BBSRC £87,460 to UoL of £175,000, Innovate UK / BBSRC, Awarded). *UoL (T. Duckett, Pearson, G. Cielniak) and Fountain and Sons.***
- **Metagenomics To Optimize The Control Of Campylobacter (BBSRC £450,447 of £1.3m, Innovate UK / BBSRC, Successfully through EOI stage), *UoL (Pearson, M Goddard, L Collins), Moy Park, BOC, Devonshire and the University of Liverpool.***
- **SALFAR: Saline Farming - innovative agriculture to adapt to climate change and sea level rise. ERDF / ESIF (6.4m euro over 54 months, 8 EU partners).**
- **Small Holder Supply Chain Development - Using UK Science and Technology to Improve Rural Livelihoods (£108,192 of £1.4m, Innovate UK / DFID, Successfully through EOI stage). UoL (Pearson and I. Wright), Finlay's Ltd, Forum for the Future, University of Reading (Chemistry).**
- **Synthesis of remote sensing with novel ground based soil moisture monitoring sensors. STFC Newton Fund with China (£729K of £1.4m, with CEH, University of Aberystwth, CAMS China, NUIST China). Pearson PI**
- **Big Data and eco-innovative resource use in the NSR Greenhouse industry - greening the growth in horticultural production (SMARTGREEN). (£3m, £255K to UoL). 6 EU HEI partners. (Zolatos, Leonidios, Pearson).**
- **AUTOMATO Robot Tomato Harvester (IUK £695K, £174K to UoL). *Xihelm, STC, UoL.* (Neumann and Pearson).**

Lecturer in Horticulture, University of Reading: Research career started at the University of Reading (1993) winning grant income of £2.76m, conducted research for 41 companies and institutions inc the EPSRC, DEFRA, Cadbury, 3M, HDC, British Polythene Ind. plc. 44 refereed publications from 6 years research and additional 64 reports and KT notes. He supervised 12 PhD students to completion working on a range of topics inc. plant environmental responses, crop modelling, decision support, plant pathogen monitoring, vegetable, salad, ornamental crop production, cocoa crop forecasting and horticultural engineering.

Produce Technologist for Marks and Spencer plc, focussing on cut flowers, team grew retail sales from £65m to £110m. Responsible for the development and writing of the Category plan for the in 2003/04. Managed 6 key suppliers and >50 growers world wide, ranging from Kenya, Israel, Colombia to Europe and the UK. Seconded to the Ethical Trading Initiative to help deal with issues on worker welfare malpractice in Kenya. Co author of the Globalgap on farm standard for cut flowers.

Managing Director of Winchester Growers, largest grower and packer of cut flowers in Europe, supplying UK retailers. Managed four sites, 2 in Lincolnshire, one in Cornwall (2000 acre farming operation) and one in Portugal (Odemira), with an FTE of up to 900 persons.

Recent Refereed Scientific Publications: Lincoln

Grieve, B., Duckett, T., Collison, M., Boyd, L., West, J., Hujun, Y., Arvin, F. and Pearson, S., 2019. The challenges posed by global broadacre crops in delivering smart agri-robotic solutions: A fundamental rethink is required. *Global Food Security*, *23*, pp.116-124.
Petropoulos, G.P., Srivastava, P.K., Piles, M. and Pearson, S., 2018. Earth Observation-Based Operational Estimation of Soil Moisture and Evapotranspiration for Agricultural Crops in Support of Sustainable Water Management. *Sustainability*, *10*(1), p.181.
Liakos, K.G., Busato, P., Moshou, D., Pearson, S. and Bochtis, D., 2018. Machine learning in agriculture: A review. *Sensors*, *18*(8), p.2674.
Kusumam, K., Krajník, T., Pearson, S., Duckett, T. and Cielniak, G., 2017. 3D-vision based detection, localization, and sizing of broccoli heads in the field. *Journal of Field Robotics*, *34*(8), pp.1505-1518.

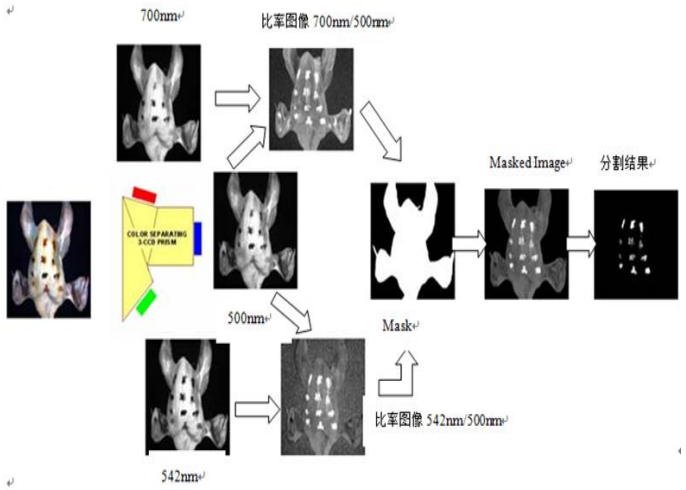
Highlight Refereed Publications: Reading

TD Harwood, FA Al Said, S Pearson, SJ Houghton, P Hadley. (2010). Modelling uncertainty in field grown iceberg lettuce production for decision support. *Computers and Electronics in Agriculture* 71 (1), 57-63.
Adams, S.R., Pearson, S. and Hadley, P. (2001). Towards a physiologically-based quantitative flowering model: understanding the phases of photoperiod sensitivity. *Journal of Experimental Botany*, **52**, 655-662.
Adams, S.R., Pearson, S., Hadley, P. and Patefield, W.M., 1999. The Effects of Temperature and Light Integral on the Phases of Photoperiod Sensitivity inPetunia× hybrida. *Annals of Botany*, *83*(3), pp.263-269.
Pearson, S., Hadley, P. and Wheldon, A.E., 1994. A model of the effects of temperature on the growth and development of cauliflower (Brassica oleracea L. botrytis). *Scientia Horticulturae*, *59*(2), pp.91-106.

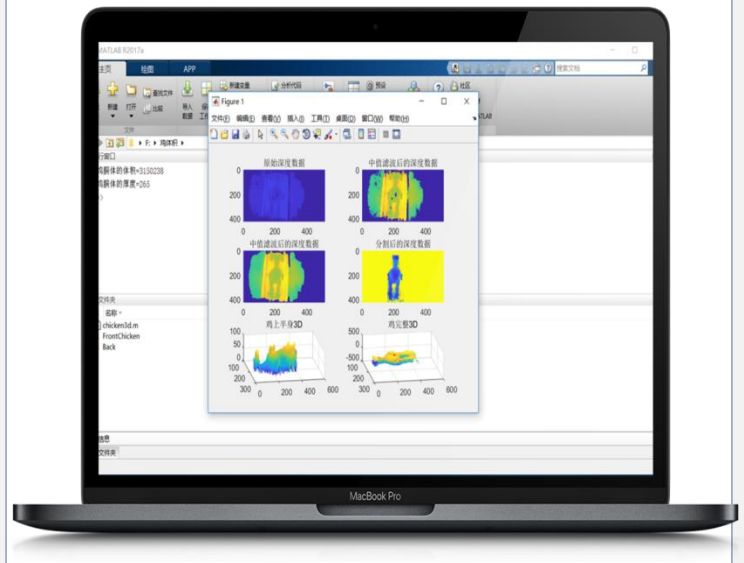
Simon Pearson教授简历

申请背景-联培前的课题

Research and demonstration of technology and equipment for reduction and classification of livestock and poultry after slaughter" public welfare industry (Agriculture) research project 201303083



"Pilot test and industrialization demonstration of comprehensive supporting technology for high quality and safety fresh chicken production" major agricultural scientific and technological achievements transformation project of Ministry of agriculture 2013gb2c100151



"Research and application of key technologies for on-line detection of poultry carcass surface pollutants" Jiangsu Science and technology support plan be2014708

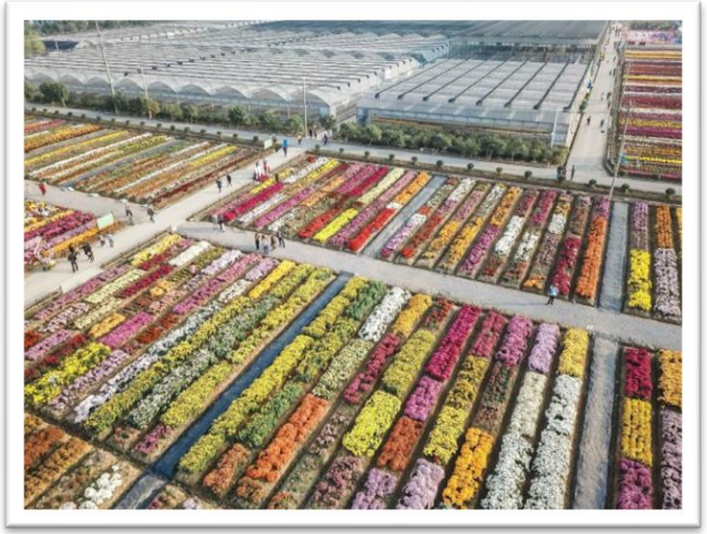
基于深度相机和机器视觉技术的鸡胴体质量在线分级系统

申请背景-联培的课题

1. Research on Automatic Picking Robot for Tea Chrysanthemum（茶菊采摘机器人）

- It is the best harvesting period when the chrysanthemum petal reach 2/3 of fully opened status.
- For the fully open flowers, the fragrance is easily to be dissipated, and petals are tend to scatter after processing.
- Manual picking is very expensive, and efficiency of manual picking is very low.
- Motivate by President Prof. Fadi Chen.

Agricultural Robot - University of Lincoln

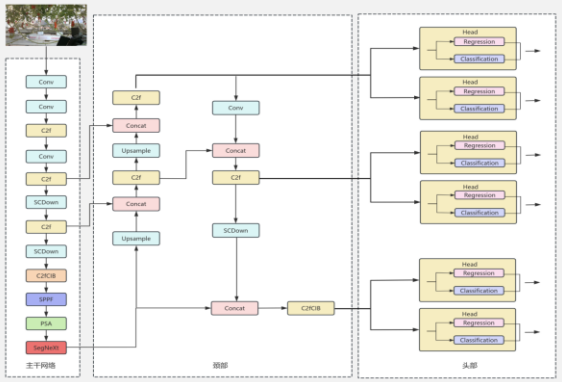


Tea Chrysanthemum - Nanjing Agricultural University

赴林肯大学联培对工作的影响

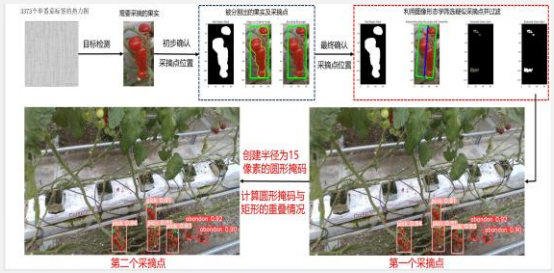
动态非结构温室环境下串番茄成熟度识别

网络结构图



基于生长特性的双采摘点检测

双采摘点计算流程



面向细长串番茄茎的深度值估计

深度值估计流程

使用ArUco 码记录深度相机到采摘点的真实距离

遍历串番茄茎的每一个像素并提取对应的深度值

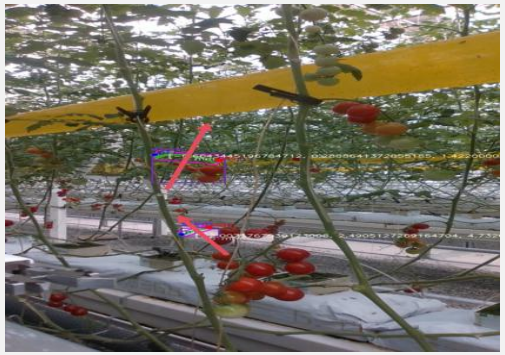
设置深度值阈值，将小于30厘米大于1.5米的深度值剔除

寻找剩余深度值与ArUco 码记录的真实距离之间的映射关系

确定所有深度值的中位数为最佳深度值选择

旋转模组下的位姿估计

基于双采摘点的位姿估计示意图

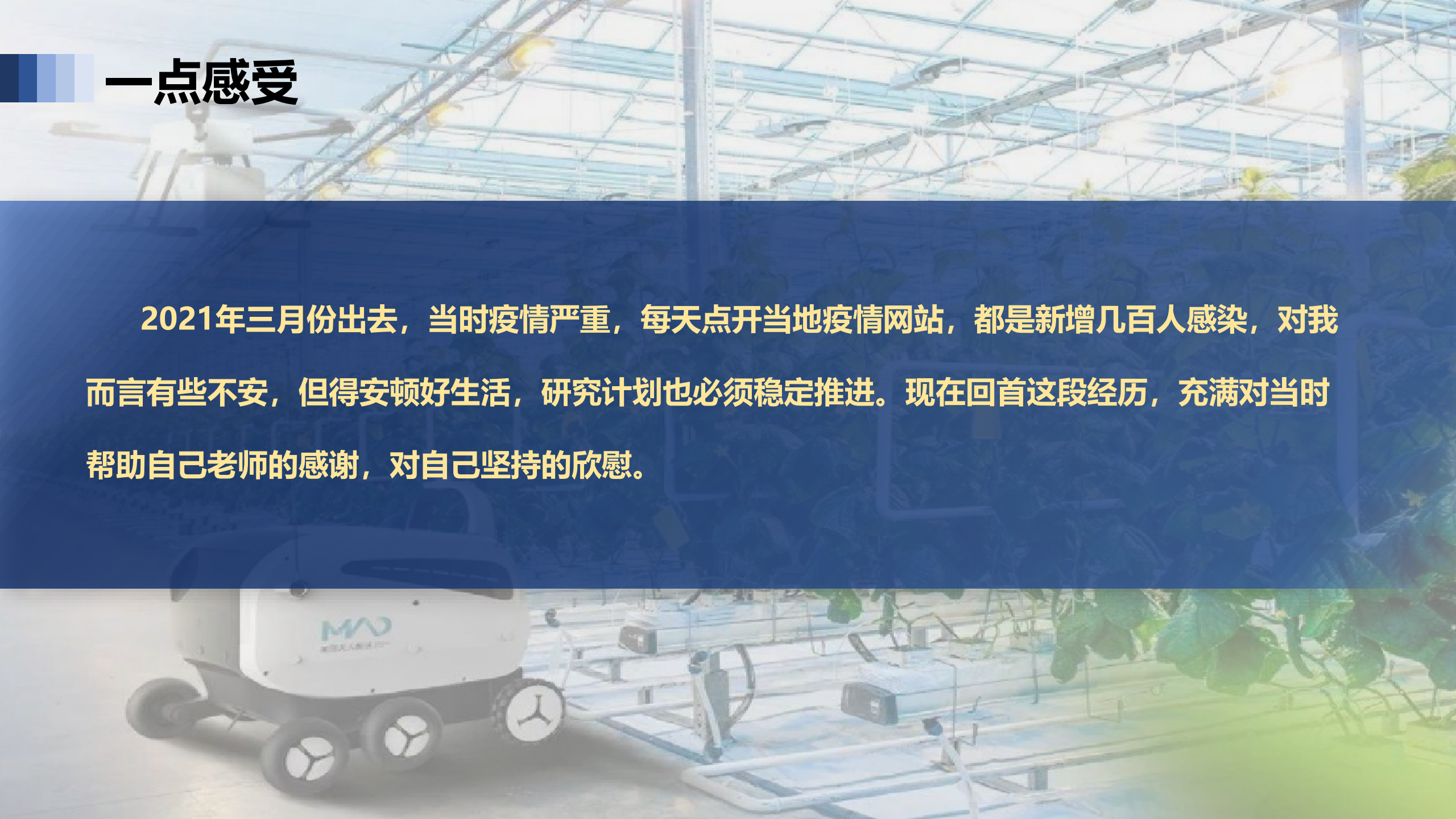


在新基地温室实现串番茄三臂采摘

带领三名研究生，进行采摘机器人视觉系统研发工作，初步实现串番茄三臂采摘机器人在温室场景中作业

一点感受

2021年三月份出去，当时疫情严重，每天点开当地疫情网站，都是新增几百人感染，对我而言有些不安，但得安顿好生活，研究计划也必须稳定推进。现在回首这段经历，充满对当时帮助自己老师的感谢，对自己坚持的欣慰。



JAAS
江苏省农业科学院

谢 谢!