

师资队伍/个人信息

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研究领域	智能车辆导航与控制；智能化农业装备；农业物联网			
社会兼职	中国农业工程学会会员			
承担项目	<p>主持科研项目：</p> <p>[1]2014 年 7 月~2017 年 6 月，江苏省自然科学基金：农业环境下拖拉机自主定位与地图创建关键技术研究（项目编号：BK20140729）。</p> <p>[2]2015 年 1 月~2017 年 12 月，国家自然科学基金：农业车辆自主定位与环境地图创建问题研究（项目编号：31401291）。</p> <p>[3]2015 年 1 月~2017 年 12 月，中央高校基本科研业务费青年基金项目：农业车辆自主定位与环境地图创建问题研究（项目编号：KJQN201556）。</p> <p>[4]2018 年 1 月~2019 年 12 月，中央高校基本科研业务费实验室设备专项基金项目：三相变频调速智能测控实训系统研发（项目编号：SYSB201818）。</p> <p>[5]2018 年 7 月~2019 年 6 月，江苏省研究生培养创新工程项目：基于多传感器数据融合的自主导航（项目编号：编号:SJCX18_0253）。</p> <p>[6]2019 年 9 月~2020 年 12 月，企业横向课题：智慧车间无线传感网络规划与设计（项目编号：HX201909004）。</p> <p>[7]2019 年 9 月~2020 年 12 月，企业横向课题：无人驾驶车辆物联网网关设计（项目编号：HX201909005）。</p> <p>[8]2019 年 7 月~2020 年 12 月，企业横向课题：视频引伸计系统开发设计（项目编号：HX201909007）。</p> <p>[9]2021 年 1 月~2022 年 12 月，企业横向课题：自主导航车辆障碍物探测系统开发与设计（项目编号：2021320122000324）。</p> <p>[10]2020 年 9 月~2022 年 8 月，企业横向课题：智能车辆云网关系统开发与设计（项目编号：2021320122000323）。</p> <p>[11]2021 年 7 月~2022 年 6 月，江苏省研究生培养创新工程项目：基于激光雷达的导航车辆障碍物探测系统研究（项目编号：SJCX21_0221）。</p> <p>主持教改项目：</p> <p>[1]2014 年 1 月~2015 年 12 月，院级教改项目：实验室信息化管理模式研究。</p> <p>[2]2018 年 1 月~2018 年 12 月，院级教改项目：基于专业认证标准的农业电气化专业教学资料规范研究。</p>			

	<p>[3]2020年1月~2021年12月,基于OBE-CDIO理念融合的农电专业项目课程群建设与实践(电力系统分析与继电保护)。</p>
<p>学术成果</p>	<p>发表论文:</p> <p>[1]TianGuangzhao, Gu Baoxing*, Xu Weiyue, Zhou Jun. Small tractor navigation system based on tandem PD control law[J]. International Agricultural Engineering Journal, 2017, 26(4): 1-9.</p> <p>[2]田光兆, 顾宝兴*, Irshad Ali Mari, 周俊, 王海青. 基于三目视觉的自主导航拖拉机行驶轨迹预测方法及试验[J]. 农业工程学报, 2018, 34(19):40-45.</p> <p>[3]Tian G Z, Zhou J*, Gu B X. Slipping detection and control in gripping fruits and vegetables for agricultural robot[J]. International Journal of Agricultural and Biological Engineering, 2018, 11(4): 45-51.</p> <p>[4]Guangzhao Tian, Baoxing Gu*, Kai Chen ,Yufeng Liu , Jiansheng Wei. Method of automatic steering system design and parameter optimisation for small tractors[J]. The Journal of Engineering, 2019, 2019(22): 8353-8358.</p> <p>[5]Guangzhao Tian, Xiaona Li, Baohua Zhang*, Jun Zhou, Baoxing Gu. Comparative study of two different strategies for determination of soluble solids content of apples from multiple geographical regions by using FT-IR spectroscopy [J]. IEEE Access, 2019, 7(1): 179734-179745.</p> <p>[6]田光兆, 安秋, 姬长英*, 顾宝兴, 王海青, 赵建东. 基于 Gray-EKF 算法的智能农业车辆同时定位与地图创建[J]. 农业工程学报, 2012, 28 (19) : 17-25.</p> <p>[7]田光兆, 安秋, 姬长英*, 顾宝兴, 王海青, 赵建东. 低速智能农业车辆多分辨率自适应测速系统设计[J]. 农业机械学报, 2013, 44 (2) : 159-164.</p> <p>[8]田光兆, 安秋, 姬长英*, 顾宝兴, 王海青, 赵建东. 基于立体视觉的智能农业车辆实时运动检测[J]. 农业机械学报, 2013, 44 (7) : 210-215.</p> <p>授权发明专利:</p> <p>[1]田光兆, 顾宝兴, 王海青, 周俊, 安秋. 一种履带式联合收割机单点测向方法[P]. 中国专利: 2017107864287, 2017-09-04.</p> <p>[2]田光兆, 顾宝兴, 王海青, 周俊, 安秋. 一种电压液压转向轮式拖拉机转向控制信号标定方法[P].中国专利: 2017111344162, 2017-11-16.</p> <p>[3]田光兆, 顾宝兴, 王海青, 周俊, 安秋. 一种自主导航拖拉机电控装置的功耗无线检测系统及方法[P].中国专利: 2017111429531, 2017-11-16.</p> <p>[4]田光兆, 顾宝兴, 王海青, 周俊, 安秋. 一种矮化密植果树冠层三维地图构建系统和方法[P].中国专利: 2017106465472, 2017-08-01.</p> <p>[5]田光兆, 顾宝兴, 王海青, 周俊, 安秋. 一种自主导航拖拉机夜间全景视觉相对定位系统和方法[P].中国专利: 2017106465491, 2017-08-01.</p> <p>[6]田光兆, 顾宝兴, 王海青, 周俊, 安秋. 一种光照自适应的拖拉机视觉导航图像采集系统及方法[P].中国专利: 201710172777X, 2017-03-22.</p> <p>[7]田光兆, 顾宝兴, 王海青, 周俊, 安秋. 一种基于双目视觉的拖拉机运动矢量预测方法[P].中国专利: 2017101728113, 2017-03-22.</p> <p>[8]刘宇峰, 田光兆, 顾宝兴, 魏建胜, 安秋, 周俊.一种自主导航农用车最短避障路径规划方法[P].中国专利: 2018113239466, 2018-11-08.</p> <p>[9]顾宝兴, 田光兆, 林相泽, 李和, 王海青, 周俊.一种基于 AR 的矮化密植果树定穴施肥遥控操作方法[P].中国专利: 2019105300575, 2019-06-19.</p> <p>[10]田光兆, 顾宝兴, 林相泽, 李和, 王海青, 周俊.一种单轨道式施肥机精准定位</p>

方法[P].中国专利: 2019105296989, 2019-06-19.

[11]田光兆, 顾宝兴, 林相泽, 李和, 王海青, 周俊. 基于电力载波自组网的负荷投切实验系统及其操作方法[P].中国专利: 2019105298096, 2019-06-19.

[12]田光兆, 郑奎, 夏丹青, 朱双双, 党安佳. 一种无人驾驶车辆隧道内姿态检测方法[P].中国专利: 2021103768164, 2021-04-18.

[13]田光兆, 郑奎, 夏丹青, 朱双双, 党安佳. 一种轮式车辆虚拟轮转向角测量方法[P].中国专利: 2021103875560, 2021-04-12.

[14]田光兆, 郑奎, 沈建州. 一种智能教练车踏板位置检测方法[P].中国专利: 2021109132665, 2021-08-10.

[15]田光兆, 郑奎, 沈建州. 一种基于机器视觉的虚拟轮转向角测量方法[P].中国专利: 202110909223X, 2021-08-09.

授权实用新型专利:

[1]陈凯, 顾宝兴, 田光兆, 林相泽, 刘宇峰, 魏建胜. 一种非接触式避障割草作业系统[P].中国专利: 2019209208959, 2019-06-19.

[2]魏建胜, 田光兆, 刘宇峰, 顾宝兴, 安秋, 周俊. 一种自主导航拖拉机障碍物初步探测系统[P].中国专利: 2018205425618, 2018-04-17.

[3]郑奎, 田光兆, 谈英, 李崇, 潘广银, 郑超. 一种用于智能驾驶的模拟装置[P].中国专利: 2020226720762, 2020-11-18.

[4]田光兆, 郑奎, 夏丹青, 朱双双, 党安佳. 一种用于智能车辆的安全员辅助装置[P].中国专利: 2021208828190, 2021-04-27.

[5]田光兆, 郑奎, 夏丹青, 朱双双, 党安佳. 一种无人驾驶运输车碰撞预警装置[P].中国专利: 202120816225X, 2021-04-21.

[6]田光兆, 郑奎, 夏丹青, 朱双双, 党安佳. 一种无人驾驶运输车速度较准装置[P].中国专利: 2021208300940, 2021-04-22.

[7]田光兆, 郑奎, 夏丹青, 朱双双, 党安佳. 一种无人驾驶运输车车载光伏追日装置[P].中国专利: 2021208208747, 2021-04-21.

[8]田光兆, 郑奎, 夏丹青, 朱双双, 党安佳. 一种无人驾驶车辆导航控制的云网关装置[P].中国专利: 2021207760792, 2021-04-16.

[9]田光兆, 郑奎, 夏丹青, 朱双双, 党安佳. 一种基于声纹信息识别的智能车门控制装置[P].中国专利: 2021207760805, 2021-04-16.

登记软件著作权:

[1]自主导航农业车辆环境点云地图创建系统 V1.0, 2017SR564734, 南京农业大学:中国, 2017-10-12.

[2]智能化农业车辆导航系统 V1.0, 2017SR565109, 南京农业大学:中国, 2017-10-12.

[3]履带式联合收割机导航控制系统 V1.0, 2017SR538282, 南京农业大学:中国, 2017-09-22.

[4]自主导航农业车辆辅助光源自动控制系统 V1.0, 2018SR082421, 南京农业大学:中国, 2018-02-01.

[5]三相变频调速智能测控实训系统 V1.0, 2019SR0153239, 南京农业大学:中国, 2019-02-19.

[6]高地隙喷雾机控制系统 V1.0, 2019SR0041369, 南京农业大学:中国, 2019-02-19.


[7]基于 CAN 总线的三相交流电源实时测控系统 V1.0, 2019SR0734929, 南京农业大学:中国, 2019-07-19.

[8]电气设备检测与控制实训系统 V1.0, 2019SR0734961, 南京农业大学:中国, 2019-07-16.

[9]农田智能驱鸟系统 V1.0, 2019SR0734952, 南京农业大学:中国, 2019-07-16.

	<p>[10]智能型缺相保护系统 V1.0, 2019SR0734938, 南京农业大学:中国, 2019-07-16.</p> <p>[11]无人驾驶拖拉机无线传感系统 V1.0, 2019SR0850534, 南京农业大学:中国, 2019-08-15.</p> <p>[12]喷雾机数据采集与控制系统 V1.0, 2019SR1304037, 南京农业大学: 中国, 2019-12-06.</p> <p>[13]三相变频调速实验平台数据与采集控制系统 V1.0, 2020SR0033662, 南京农业大学: 中国, 2020-01-08.</p> <p>[14]三相变频调速实验平台智能评分系统 V1.0, 2020SR0033668, 南京农业大学: 中国, 2020-01-08.</p> <p>[15]甲烷仓库火灾预警系统 V1.0, 2020SR0791555, 南京农业大学:中国, 2020-07-17.</p> <p>[16]加工车间粉尘监测系统 V1.0, 2020SR0788213, 南京农业大学:中国, 2020-07-17.</p> <p>[17]单目视觉微距测量系统 V1.0, 2020SR0788206, 南京农业大学:中国, 2020-07-17.</p> <p>[18]单相交流参数智能采集系统 V1.0, 2020SR0788226, 南京农业大学:中国, 2020-07-17.</p> <p>[19]电力系统不对称短路虚拟实验系统 V1.0, 2020SR0786671, 南京农业大学:中国, 2020-07-17.</p> <p>[20]高通量快速考勤系统 V1.0, 2020SR0788220, 南京农业大学:中国, 2020-07-17.</p> <p>[21]汽车防碰撞预警系统 V1.0, 2020SR0788389, 南京农业大学:中国, 2020-07-17.</p> <p>[22]智能喷雾机药量监测与预警系统 V1.0, 2020SR0761692, 南京农业大学: 中国, 2020-07-13.</p> <p>[23]智能声纹锁管理系统 V1.0, 2020SR0761670, 南京农业大学: 中国, 2020-07-13.</p> <p>[24]电力系统三相短路虚拟实验系统 V1.0, 2020SR0788199, 南京农业大学:中国, 2020-07-17.</p> <p>[25]基于机器视觉的柑橘自动计数系统 V1.0, 2020SR0791576, 南京农业大学:中国, 2020-07-17.</p>
<p>奖励荣誉</p>	<p>教学工作奖励: 2018 年第四届西浦全国大学教学创新大赛年度教学创新二等奖。</p> <p>学生工作奖励: 南京农业大学 2018 年度优秀学生教育管理工作者。</p> <p>党内工作奖励: 电气工程系 2018 年度优秀共产党员。</p> <p>学科竞赛奖励:</p> <p>[1]2015 年指导学生参加第一届东方红智能农业装备大赛, 获二等奖。</p> <p>[2]2017 年指导学生参加挑战杯, 获江苏省二等奖。</p> <p>[3]2017 年指导学生参加挑战杯校内选拔赛, 获南京农业大学特等奖。</p> <p>[4]2018 年指导学生参加全国 3D 大赛, 获江苏赛区特等奖。</p> <p>[5]2018 年指导学生参加全国 3D 大赛, 获全国一等奖。</p>
<p>其他</p>	<p>[1]担任江苏省双创计划科技副总、盐城市科技副总。</p> <p>[2]获常州市第十四批“龙城英才”领军人才创业项目支持。</p>

Teaching staff/Personal information

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Social appointments	Member of Chinese society of Agricultural Engineering			
Research projects	<p>Presided over scientific research projects:</p> <p>[1]July 2014 to June 2017, Natural Science Foundation of Jiangsu Province: Research on key technologies of tractor autonomous positioning and map creation in agricultural environment(Project No.:BK20140729).</p> <p>[2]January 2015 to December 2017,National Natural Science Foundation of China: Research on autonomous positioning of agricultural vehicles and creation of environmental map(Project No.:31401291).</p> <p>[3]January 2015 to December 2017,Youth Fund Project of basic scientific research business expenses of Central University: Research on autonomous positioning of agricultural vehicles and creation of environmental map (Project No.:KJQN201556).</p> <p>[4]January 2018 to December 2019, Special Fund Project of Laboratory Equipment for Basic Scientific Research Business Expenses of Central University: Research and development of intelligent measurement and control training system for three-phase variable frequency speed regulation(Project No.:SYSB201818).</p> <p>[5]July 2018 to June 2019, Jiangsu Province Graduate Training Innovation Project: Autonomous navigation based on multi sensor data fusion(Project No.:SJCX18_0253).</p> <p>[6]September 2019 to December 2020,Enterprise Project: Planning and design of wireless sensor network in intelligent workshop (Project No.:HX201909004).</p> <p>[7]September 2019 to December 2020,Enterprise Project: Design of IOT gateway for driverless vehicle(Project No.:HX201909005).</p> <p>[8]July 2019 to December 2020, Enterprise Project: Development and design of video extensometer system (Project No.: HX201909007).</p> <p>[9]January 2021 to December 2022, Enterprise project: Development and design of obstacle detection system for autonomous navigation vehicle(Project No.:2021320122000324)</p> <p>[10]September 2020 to August 2022, Enterprise Project: Development and design of intelligent vehicle cloud gateway system (Project No.: 202132012200323).</p> <p>[11]July 2021 to June 2022, Jiangsu Postgraduate Training Innovation Project:</p>			

	<p>Research on obstacle detection system of navigation vehicle based on lidar (Project No.: SJCX21_0221).</p> <p>Presided over the educational reform projects:</p> <p>[1]January 2014 to December 2015 , college level educational reform project: Research on laboratory information management mode.</p> <p>[2]January 2018 to December 2018, college level educational reform project: Research on teaching material specification of agricultural electrification specialty based on professional certification standard.</p> <p>[3]January 2020 to December 2021 , Construction and practice of rural power professional project curriculum group based on OBE-CDIO concept fusion (Power system analysis and relay protection) .</p>
<p>Academic achievements</p>	<p>Paper:</p> <p>[1]TianGuangzhao, Gu Baoxing*, Xu Weiyue, Zhou Jun. Small tractor navigation system based on tandem PD control law[J]. International Agricultural Engineering Journal, 2017, 26(4): 1-9.</p> <p>[2]Tian Guangzhao, Gu Baoxing*, Irshad Ali Mari, Zhou Jun, Wang Haiqing. Traveling trajectory prediction method and experiment of autonomous navigation tractor based on trinocular vision[J]. Transactions of the Chinese Society of Agricultural Engineering (Transactions of the CSAE), 2018, 34(19):40-45.</p> <p>[3]Tian G Z, Zhou J*, Gu B X. Slipping detection and control in gripping fruits and vegetables for agricultural robot[J]. International Journal of Agricultural and Biological Engineering, 2018, 11(4): 45–51.</p> <p>[4]Guangzhao Tian, Baoxing Gu*, Kai Chen ,Yufeng Liu , Jiansheng Wei. Method of automatic steering system design and parameter optimisation for small tractors[J]. The Journal of Engineering, 2019, 2019(22): 8353-8358.</p> <p>[5]Guangzhao Tian, Xiaona Li, Baohua Zhang*, Jun Zhou, Baoxing Gu. Comparative study of two different strategies for determination of soluble solids content of apples from multiple geographical regions by using FT-IR spectroscopy [J]. IEEE Access, 2019, 7(1): 179734-179745.</p> <p>[6]TianGuangzhao, An Qiu, Ji Changying*,Gu Baoxing,WangHaiqing,ZhaoJiandong.Simultaneous localization and mapping based on Gray EKF for intelligent agricultural vehicle[J]. Transactions of the Chinese Society of Agricultural Engineering (Transactions of the CSAE), 2012, 28 (19) : 17-25.</p> <p>[7]Tian Guangzhao,AnQiu,JiChangying*,Gu Baoxing,WangHaiqing,ZhaoJiandong.Design of Multiresolution Adaptive Speed Measurement System for Low-speed Intelligent Agricultural Vehicle[J]. Journal of agricultural machinery ,2013, 44 (2) : 159-164.</p> <p>[8]Tian Guangzhao,AnQiu,JiChangying*,Gu Baoxing,WangHaiqing,ZhaoJiandong.Real-time Motion Detection for Intelligent Agricultural Vehicle Based on Stereo Vision[J]. Journal of agricultural machinery, 2013, 44 (7) : 210-215.</p> <p>Invention patent:</p> <p>[1] Tian Guangzhao, Gu Baoxing, Wang Haiqing, Zhou Jun, an Qiu. A single point direction finding method for crawler combine harvester [P]. Chinese patent: 2017107864287, September 4, 2017.</p> <p>[2] Tian Guangzhao, Gu Baoxing, Wang Haiqing, Zhou Jun, an Qiu. A calibration</p>

method for steering control signal of voltage hydraulic steering wheel tractor [P]. Chinese patent: 2017111344162, November 16, 2017

[3] Tian Guangzhao, Gu Baoxing, Wang Haiqing, Zhou Jun, an Qiu. A wireless detection system and method for power consumption of electronic control device of autonomous navigation tractor [P]. Chinese patent: 2017111429531, November 16, 2017.

[4] Tian Guangzhao, Gu Baoxing, Wang Haiqing, Zhou Jun, an Qiu. A system and method for constructing three-dimensional map of dwarf dense planting fruit tree canopy [P]. Chinese patent: 2017106465472, August 1, 2017.

[5] Tian Guangzhao, Gu Baoxing, Wang Haiqing, Zhou Jun, an Qiu. A night panoramic vision relative positioning system and method for autonomous navigation tractor [P]. Chinese patent: 2017106465491, August 1, 2017.

[6] Tian Guangzhao, Gu Baoxing, Wang Haiqing, Zhou Jun, an Qiu. A light adaptive tractor visual navigation image acquisition system and method [P]. Chinese patent: 201710172777x, March 22, 2017

[7] Tian Guangzhao, Gu Baoxing, Wang Haiqing, Zhou Jun, an Qiu. A tractor motion vector prediction method based on binocular vision [P]. Chinese patent: 2017101728113, March 22, 2017

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<p>Reward & honor</p>	<p>Reward for teaching: The second prize of the annual teaching innovation award of the 4th Xipu national university teaching innovation competition in 2018.</p> <p>Reward for student Work: Outstanding student education and management worker of Nanjing Agricultural University in 2018.</p> <p>Reward for inner party work: Excellent Communist Party member of the Department of electrical engineering in 2018.</p> <p>Reward for subject competition: [1]the second prize in The first Dongfanghong intelligent agricultural equipment competition as guide teacher in 2015. [2]the Second prize of Jiangsu Province in The Challenge Cup as guide teacher in 2017. [3]the Grand prize of Nanjing Agricultural University in The Challenge Cup in school trials as guide teacher in 2017. [4]Jiangsu competition District special prize in The National 3D competition as</p>

	<p>guide teacher in 2018.</p> <p>[5]National first prize in The National 3D competition as guide teacher in 2018.</p>
Others	<p>[1] Served as the vice president of science & technology of Jiangsu innovation and entrepreneurship plan and the vice president of science and technology of Yancheng City.</p> <p>[2] Supported by the 14th batch of "Longcheng talents" leading talent entrepreneurship project in Changzhou.</p>