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# **Teaching staff/Personal information**

Name	Guangzhao Tian	Gender	Male	
Title	Associate			

Research on obstacle detection system of navigation vehicle based on lidar (Project No.: SJCX21\_0221).

## Presided over the educational reform projects

- [1]January 2014 to December 2015 college level educational reform project Research on laboratory information management mode.
- [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.
- [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 .

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- [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
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# Academic achievements

- [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
- [7]Tian Guangzhao, AnQiu, JiChangying\*, Gu Baoxing, Wang Haiqing, Zhao Jiandong. Design of Multiresolution Adaptive Speed Measurement System for Low-speed Intelligent Agricultural Vehicle [J] Journal of agricultural machinery, 2013 44 2 159-164
- [8]Tian Guangzhao, AnQiu, JiChangying\*, Gu Baoxing, Wang Haiqing, Zhao Jiandong. Real-time Motion Detection for Intelligent Agricultural Vehicle Based on Stereo Vision[J] Journal of agricultural machinery 2013 44 7 210-215

### **Invention patent**

- [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.
- [2] Tian Guangzhao, Gu Baoxing, Wang Haiqing, Zhou Jun, an Qiu. A calibration

- 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
- [8] Liu Yufeng, Tian Guangzhao, Gu Baoxing, Wei Jiansheng, an Qiu, Zhou Jun. A shortest obstacle avoidance path planning method for autonomous navigation agricultural vehicles [P]. Chinese patent: 2018113239466, November 8, 2018.
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- [14] Tian Guangzhao, Zheng Kui, Shen Jianzhou. A pedal position detection method for intelligent coach [P]. Chinese patent: 2021109132665, August 10, 2021.
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### **Utility model patent**

- [1] Chen Kai, Gu Baoxing, Tian Guangzhao, Lin xiangze, Liu Yufeng, Wei Jiansheng. A non-contact obstacle avoidance mowing system [P]. Chinese patent: 2019208959, June 19, 2019
- [2] Wei Jiansheng, Tian Guangzhao, Liu Yufeng, Gu Baoxing, an Qiu, Zhou Jun. a preliminary obstacle detection system for autonomous navigation tractor [P]. Chinese

- patent: 2018205425618, April 17, 2018.
- [3] Zheng Kui, Tian Guangzhao, Tan Ying, Li Chong, pan Guangyin, Zheng Chao. A simulation device for intelligent driving [P]. Chinese patent: 2020226720762, November 18, 2020.
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## Software copyright

- [1]Point cloud map creation system for autonomous navigation agricultural vehicle environment V1.0 2017SR564734 Nanjing Agricultural University :China 2017-10-12
- [2]Intelligent agricultural vehicle navigation system V1.0 2017SR565109 Nanjing Agricultural University :China 2017-10-12
- [3]Navigation control system of crawler combine V1.0 2017SR538282 Nanjing Agricultural University :China 2017-09-22
- [4]Automatic control system of auxiliary light source for autonomous navigation agricultural vehicle V1.0 2018SR082421 Nanjing Agricultural University: China 2018-02-01
- [5]Intelligent measurement and control training system of three phase frequency conversion and speed regulation V1.0 2019SR0153239 Nanjing Agricultural University: China 2019-02-19
- [6]Control system for highland gap sprayer V1.0 2019SR0041369 Nanjing Agricultural University :China 2019-02-19
- [7]Real time measurement and control system of three-phase AC power supply based on CAN bus V1.0 2019SR0734929 Nanjing Agricultural University :China 2019-07-19
- [8]Electrical equipment testing and control training systemV1.0 2019SR0734961 Nanjing Agricultural University :China 2019-07-16
- [9]Farmland intelligent bird repellent system V1.0 2019SR0734952 Nanjing Agricultural University :China 2019-07-16
- [10]Intelligent open phase protection system V1.0 2019SR0734938 Nanjing Agricultural University :China 2019-07-16

- [11]Wireless sensor system for unmanned tractor V1.0 2019SR0850534 Nanjing Agricultural University :China 2019-08-15
- [12]Data acquisition and control system for sprayer V1.0 2019SR1304037 Nanjing Agricultural University: China 2019-12-06
- [13]Data acquisition and control system of three phase frequency control experiment platform V1.0 2020SR0033662 Nanjing Agricultural University :China 2020-01-08
- [14]Intelligent scoring system of three phase frequency control experiment platform V1.0 2020SR0033668 Nanjing Agricultural University: China 2020-01-08
- [15]Fire warning system for methane warehouse V1.0 2020SR0791555 Nanjing Agricultural University: China 2020-07-17
- [16]Dust monitoring system of processing workshop V1.0 2020SR0788213 Nanjing Agricultural University :China 2020-07-17
- [17]Monocular vision macro measurement system V1.0 2020SR0788206 Nanjing Agricultural University: China 2020-07-17
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- [19]Virtual experiment system of asymmetric short circuit in power system V1.0 2020SR0786671 Nanjing Agricultural University :China 2020-07-17
- [20]High throughput and fast attendance system V1.0 2020SR0788220 Nanjing Agricultural University :China 2020-07-17
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- [23]Intelligent voiceprint lock management system V1.0 2020SR0761670 Nanjing Agricultural University: China 2020-07-13
- [24] Virtual experiment system of three phase short circuit in power system V1.0 2020SR0788199 Nanjing Agricultural University :China 2020-07-17
- [25]Automatic citrus counting system based on machine vision V1.0 2020SR0791576 Nanjing Agricultural University :China 2020-07-17

### **Reward for teaching**

The second prize of the annual teaching innovation award of the 4th Xipu national university teaching innovation competition in 2018.

### **Reward for student Work**

Outstanding student education and management worker of Nanjing Agricultural University in 2018.

## Reward for inner party work

## Reward &honor

Excellent Communist Party member of the Department of electrical engineering in 2018.

## **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

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