

# Table of Contents

Target Detection in Agriculture Field by Eigenvector Reduction Method of Cem .....	1
<i>Chun-hong Liu and Ping Li</i>	
Application of 3S Techniques in the Study of Wetland Environment of Dong Ting Lake .....	8
<i>Baicheng Xie, Chunxia Zhang, Xiqiang Shuai, and Boliang Luo</i>	
A Classification of Remote Sensing Image Based on Improved Compound Kernels of Svm .....	15
<i>Jianing Zhao, Wanlin Gao, Zili Liu, Guifen Mou, Lin Lu, and Lina Yu</i>	
Monitoring Method of Cow Anthrax Based on Gis and Spatial Statistical Analysis .....	21
<i>Lin Li, Yong Yang, Hongbin Wang, Jing Dong, Yujun Zhao, Jianbin He, and Honggang Fan</i>	
The Research on Natural Vegetation's Response to Agriculture in Tarim River Basin in Recent 50 Years Using Multi-Source Remote Sensing Data .....	27
<i>Xiaohua Wang, Shudong Wang, Zhenyu Cai, and Jianli Ding</i>	
The Service Architecture of Agricultural Informatization .....	32
<i>Zhiyong He, Lecai Cai, Hongchan Li, and Jujia Xu</i>	
A Forecast Model of Agricultural and Livestock Products Price .....	40
<i>Wensheng Zhang, Hongfu Chen, and Mingsheng Wang</i>	
A Network-Based Management Information System for Animal Husbandry in Farms .....	49
<i>Jing Han and Xi Wang</i>	
Research of Animal Disease Information System Based on GIS Technology .....	55
<i>Hongbin Wang, Lin Li, Jing Dong, Danning Xu, and Jing Li</i>	
Modern Agricultural Digital Management Network Information System of Heilongjiang Reclamation Area Farm .....	60
<i>Xi Wang, Chun Wang, Wei Dong Zhuang, and Hui Yang</i>	
Case Analysis of Farm Agriculture Machinery Informatization Management Network System .....	65
<i>Hui Yang, Xi Wang, and Weidong Zhuang</i>	

Study on Retrieval Technique of Content-Based Agricultural Sciencetech Multimedia Data .....	77
<i>Xiaorong Yang and Wensheng Wang</i>	
A Design of an Experimental System for Trapping Pressure of Agricultural Gear Pump .....	84
<i>Xiangdong Zhu, Kejiang Zang, Guoling Niu, and Xiaohai Li</i>	
CropIrri: A Decision Support System for Crop Irrigation Management .....	90
<i>Yi Zhang and Liping Feng</i>	
Collection of Group Characteristics of <i>Pleurotus Eryngii</i> Using Machine Vision .....	98
<i>Yunsheng Wang, Changzhao Wan, Juan Yang, Jianlin Chen, Tao Yuan, and Jingyin Zhao</i>	
The Design of Flower Ecological Environment Monitoring System Based on ZigBee Technology .....	104
<i>Xiaoqing Guo and Xinjian Xiang</i>	
Zigbee Wireless Sensor Network Nodes Deployment Strategy for Digital Agricultural Data Acquisition .....	109
<i>Xinjian Xiang and Xiaoqing Guo</i>	
Research on 3G Technologies-Based Agricultural Information Resource Integration and Service .....	114
<i>Nengfu Xie and Wensheng Wang</i>	
Research on Agricultural Surveillance Video of Intelligent Tracking .....	121
<i>Lecai Cai, Jijia Xu, Jin Liangping, and Zhiyong He</i>	
Expert Control Based on Neural Networks for Controlling Greenhouse Environment .....	126
<i>Le Du</i>	
A Review of Non-destructive Detection for Fruit Quality .....	133
<i>Haisheng Gao, Fengmei Zhu, and Jinxing Cai</i>	
Automatic Grading of the Post-Harvest Fruit: A Review .....	141
<i>Haisheng Gao, Jinxing Cai, and Xiufeng Liu</i>	
A Voice Processing Technology for Rural Specific Context .....	147
<i>Zhiyong He, Zhengguang Zhang, and Chunshen Zhao</i>	
A New On-Line Detecting Apparatus of the Residual Chlorine in Disinfectant for Fresh-Cut Vegetables .....	153
<i>Chao Hu, Shu-qiang Su, Bao-guo Li, and Meng-fang Liu</i>	

The Design of the Automatic Control System of the Gripping-Belt Speed in Long-Rootstalk Traditional Chinese Herbal Harvester .....	161
<i>Jinxia Huang, Junfa Wang, and Yonghong Yu</i>	
A Virtual Prototyping Technology for Design of Pressing Equipment of Dried Tofu .....	169
<i>Mingji Huang and Xiuping Dong</i>	
Headland Turning Control Method Simulation of Autonomous Agricultural Machine Based on Improved Pure Pursuit Model .....	176
<i>Peichen Huang, Xiwen Luo, and Zhigang Zhang</i>	
Design of Plant Eco-physiology Monitoring System Based on Embedded Technology .....	185
<i>Yunbing Li, Cheng Wang, Xiaojun Qiao, Yanfei Liu, and Xinlu Zhang</i>	
Motion Law Analysis and Structural Optimization of the Ejection Device of Tray Seeder .....	191
<i>Xin Luo, Bin Hu, Chunwang Dong, and Lili Huang</i>	
Nozzle Fuzzy Controller of Agricultural Spraying Robot Aiming Toward Crop Rows .....	198
<i>Jianqiang Ren</i>	
Design of Intelligent Hydraulic Excavator Control System Based on PID Method .....	207
<i>Jun Zhang, Shengjie Jiao, Xiaoming Liao, Penglong Yin, Yulin Wang, Kuimao Si, Yi Zhang, and Hairong Gu</i>	
A Control System for Tobacco Shred Production Line Based on Industrial Ethernet .....	216
<i>Li Zhang, Guang Zheng, Xinfeng Zhang, Lei Liu, and Lei Xi</i>	
Intelligent Controlling System of Aquiculture Environment .....	225
<i>Deshen Zhao and Xuemei Hu</i>	
Development of a Semi-controller for a Variable Rate Fertilizer Applicator .....	232
<i>Jianbin Ji, Xiu Wang, Yijin Mao, Liping Chen, and Lingyan Hu</i>	
Design of Intelligent Conductivity Meter Based on MSP430F149 .....	240
<i>Yaoguang Wei, Jianqing Wang, Daoliang Li, and Qisheng Ding</i>	
Intelligent Control Technology for Natural Ventilation Used in Greenhouse .....	248
<i>Yifei Chen and Wenguang Dai</i>	

An Application of RFID in Monitoring Agricultural Material Products.....	254
<i>Jianhui Du, Peipei Li, Wanlin Gao, Dezhong Wang, Qing Wang, and Yilong Zhu</i>	
The Development Model Electronic Commerce of Regional Agriculture.....	260
<i>Jun Kang, Lecai Cai, and Hongchan Li</i>	
Food Traceability System Tending to Maturation in China .....	268
<i>Fengyun Wang, Jianhua Zhu, Minghua Shang, Yimin Zhao, and Shuyun Liu</i>	
Study on Intelligent Multi-concentrates Feeding System for Dairy Cow.....	275
<i>Yinfa Yan, Ranran Wang, Zhanhua Song, Shitao Yan, and Fa-De Li</i>	
Construction of Traceability System for Quality Safety of Cereal and Oil Products .....	283
<i>Huoguo Zheng, Shihong Liu, Hong Meng, and Haiyan Hu</i>	
The Study and Implementation of Text-to-Speech System for Agricultural Information .....	291
<i>Huoguo Zheng, Haiyan Hu, Shihong Liu, and Hong Meng</i>	
General Framework for Animal Food Safety Traceability Using GS1 and RFID.....	297
<i>Weizhu Cao, Limin Zheng, Hong Zhu, and Ping Wu</i>	
The Function Analysis of Informationization in New Rural Cooperatives Medical Service Management .....	305
<i>Yuefeng Zhou and Min Liu</i>	
Current Situation and Countermeasures of Agricultural Information Construction in Jiamusi Area.....	312
<i>Dongwei Shao, Junfa Wang, Donghua Jiang, and Qisheng Liu</i>	
Fuzzy Comprehensive Evaluation of Rural Information Poverty in China — Case Study of Hebei Province .....	318
<i>Guizhen Sun, Shuanjun Wang, Yaqing Li, and Huijun Wang</i>	
Realization of the Regional Advantageous Agricultural Industries Analysis System .....	326
<i>Kaimeng Sun</i>	
Research of Development of Agricultural Knowledge Service in China...	333
<i>Junfeng Zhang, Cuiping Tan, Huaiguo Zheng, Sufen Sun, and Feng Yu</i>	

A Study on the Digital Integrated Platform of China Participatory Rural Community Informationization . . . . .	338
<i>Hong Zhou, Guangsheng Zhang, Xin Ning, and Jin Luo</i>	
Multipath for Agricultural and Rural Information Services in China . . . .	345
<i>Ningning Ge, Zhiyuan Zang, Lingwang Gao, Qiang Shi, Jie Li, Chunlin Xing, and Zuorui Shen</i>	
The Design and Development of Test Platform for Wheat Precision Seeding Based on Image Processing Techniques . . . . .	352
<i>Qing Li, Haibo Lin, Yu-feng Xiu, Ruixue Wang, and Chuijie Yi</i>	
Using L-M BP Algorithm Forecase the 305 Days Production of First-Breed Dairy . . . . .	359
<i>Xiaoli Wei, Guoqiang Qi, Weizheng Shen, and Sun Jian</i>	
The Fuzzy Model for Diagnosis of Animal Disease . . . . .	364
<i>Jianhua Xiao, Luyi Shi, Yu Zhang, Li Gao, Honggang Fan, Haikun Ma, and Hongbin Wang</i>	
Texture Detect on Rotary-Veneer Surface Based on Semi-Fuzzy Clustering Algorithm . . . . .	369
<i>Wei Cheng, Ping Liang, and Suqun Cao</i>	
Three-Dimension Visualization for Primary Wheat Diseases Based on Simulation Model . . . . .	375
<i>Shijuan Li and Yeping Zhu</i>	
Digital Modeling and Testing Research on Digging Mechanism of Deep Rootstalk Crops . . . . .	382
<i>ChuanHua Yang, Ma Xu, ZhouFei Wang, WenWu Yang, and XingLong Liao</i>	
In Internet-Based Visualization System Study about Breakthrough Applet Security Restrictions . . . . .	389
<i>Jie Chen and Yan Huang</i>	
Study of the Quality of Bee Product Tracking and Traceability System Based on Agent Technology . . . . .	393
<i>E. Yue, Zhu Ye Ping, and Liu Sheng Ping</i>	
RFID Based Grain and Oil Products Traceability and Its Computer Implementation . . . . .	400
<i>Haiyan Hu and Yunpeng Cui</i>	
Studies on the Pasting and Rheology of Rice Starch with Different Protein Residual . . . . .	407
<i>Qinlu Lin, ZhongHua Liu, Huaxi Xiao, Lihui Li, Fengxiang Yu, and Wei Tian</i>	

Research on Time and Spatial Variability of Soil pH in Sanmenxia  
Planted Tobacco Area ..... 420  
*Hongbo Qiao, Rui Gao, Hui Zhang, Yanchun Chen, and Yongshi Su*

Web N.0, the New Development Trend of Internet ..... 427  
*Zhiguo Sun and Wensheng Wang*

Study and Improvement for Slice Smoothness in Slicing Machine of  
Lotus Root ..... 435  
*Deyong Yang, Jianping Hu, Enzhu Wei, Hengqun Lei, and  
Xiangci Kong*

The Research of Key Technologies of Streaming Media Digital  
Resources Transmission Based on CDN and P2P ..... 442  
*Jichun Zhao, Feng Yu, Junfeng Zhang, Sufen Sun, Jianxin Guo,  
Jing Gong, and Yousen Zhao*

Influence of Sound Wave Stimulation on the Growth of Strawberry in  
Sunlight Greenhouse ..... 449  
*Lirong Qi, Guanghui Teng, Tianzhen Hou, Baoying Zhu, and  
Xiaona Liu*

Seeding Element Polarity Arrangement on Drum-Type Magnetic  
Precision Seeder ..... 455  
*Qirui Wang, Jianping Hu, Qi Liu, and Junchao Yan*

Problems and Countermeasures on the Development of Precision  
Agriculture in Heilongjiang Province ..... 461  
*Jinbo Zhang, Junfa Wang, and Caihua Li*

Research on Regional Spatial Variability of Soil Moisture Based on  
GIS ..... 466  
*Yongcun Fan, Changli Zhang, Junlong Fang, and Lei Tian*

A Study on Using AD5933 to Realize Soft-Sensing Measurement of  
Conductance and Capacitance ..... 471  
*Chuanjin Cui, Haiyun Wu, and Yueming Zuo*

Wireless Sensor Networks Applied on Environmental Monitoring in  
Fowl Farm ..... 479  
*Fangwu Dong and Naiqing Zhang*

Research on Non-destructive Comprehensive Detection and Grading of  
Poultry Eggs Based on Intelligent Robot ..... 487  
*Shucui Wang, Jinxiu Cheng, and Youxian Wen*

A Pvd Sensor for Monitoring Grain Loss in Combine Harvester ..... 499  
*Jiaojiao Xu and Yaoming Li*

Quantification Model for Estimating Temperature Field Distributions of Apple Fruit .....	506
<i>Min Zhang, Le Yang, Huizhong Zhao, Leijie Zhang, Zhiyou Zhong, Yanling Liu, and Jianhua Chen</i>	
A Wireless Real-Time Monitoring Node of the Physiological Signals for Unrestrained Dairy Cattle Using Wireless Sensor Network.....	513
<i>Xihai Zhang, Changli Zhang, Junlong Fang, and Yongcun Fan</i>	
The Application of Wireless Sensor Networks in Management of Orchard .....	519
<i>Guizhi Zhu</i>	
Research of Rice-Quality Based on Computer Vision and Near Infrared Spectroscopy .....	523
<i>RuoKui Chang, WeiYu Zhang, Jing Cui, YuanHong Wang, Yong Wei, and Yuan Liu</i>	
Soil Suitability Evaluation for Tobacco Based on Grey Cluster Analysis .....	532
<i>Rui Gao, Hong-bo Qiao, Hui Zhang, Yong-shi Su, and Yanchun Chen</i>	
Animal Disease Diagnoses Expert System Based on SVM .....	539
<i>Long Wan and Wenxing Bao</i>	
The Research and Application of Virtual Reality (VR) Technology in Agriculture Science.....	546
<i>Feng Yu, Jun-feng Zhang, Yousen Zhao, Ji-chun Zhao, Cuiping Tan, and Ru-peng Luan</i>	
Research on Vegetation Dynamic Change Simulation Based on Spatial Data Mining of ANN-CA Model Using Time Series of Remote Sensing Images .....	551
<i>Zhenyu Cai and Xiaohua Wang</i>	
<b>Author Index .....</b>	<b>559</b>