Applying Grey-Fuzzy-Fuzzy Rule to Machine Vision Based Unmanned Automatic Vehicles p. 266

AWARE: Autonomous Wireless Agent Robotic Exchange p. 276


The Mathematical Model and Control Scheme of a Four-Legged Robot Based on GZ-I and Note Module p. 300

Robot and Automation in Tunneling

Electromechanical Coupling Model for Cutterhead Driving System of Shield Machines p. 310

Dimension Optimization of an Orientation Fine-Tuning Manipulator for Segment Assembly Device p. 318

Rotation and Gate Movement Compound Control of Screw Conveyor Hydraulic System with Disturbance Compensation p. 329

Applications of the Overlapping Nodes Method in Simulating Crack-Expansion under the Action of TBM Cutter p. 341

The Simulation Analysis of the TBM Disc Cutter Phase Angle p. 348

The Design of Shield Tunnelling Machine Cutter Header’s Cutting Performance Test Bed p. 356

The Effect of TBM Hydraulic Piping System Parameters on FSI Vibration p. 363

Station Point Optimization of Total Station in Shield Tunneling Method Based on Set-Covering p. 372

Study on Earth Pressure Acting on Cutter Face Based on Nonlinear Optimization p. 383

Incident Angle Measurement of Collimated Laser Based on the Pinhole Principle p. 392

Robot Mechanism and Design

A Novel Design for the Self-reconfigurable Robot Module and Connection Mechanism p. 400

The Forward Kinematics Analysis of 6-3 Stewart Parallel Mechanisms p. 409

Portable Multi-axis CNC: A 3-CRU Decoupled Parallel Robotic Manipulator p. 418

Carton Motion-Moment Diagram and Stiffness Characteristics p. 430

Flexible Foot Design for Biped Walking on Uneven Terrain p. 442

4WD Skid-Steer Trajectory Control of a Rover with Spring-Based Suspension Analysis: Direct and Inverse Kinematic Parameters Solution p. 453

Topology and Analysis of Three-Phalanx COSA Finger Based on Linkages for Humanoid Robot Hands p. 465

Design of a Bionic Saltatorial Leg for Jumping Mini Robot p. 477

Asymmetrical Prototype of a Five-Wheeled Robot and Maneuver Analysis p. 488

Development of Controllable Two-Way Self-locking Mechanism for Micro In-Pipe Robot p. 499

Trench-Crossing Capability Analysis of a Reconfigurable Tracked Mobile Robot p. 509

Service Robotics

Automatic Cooking Robot with a Novel Feeding System p. 519

Multi-sensor Based Autonomous Underwater Manipulator Grasp p. 530
The Targets Pursuit for Multi-robot System with Hybrid Wireless Sensor Networks p. 538
A Fast Robot Path Planning Algorithm Based on Image Thinning p. 548
Automatic Micro-manipulation Based on Visual Servoing p. 558
Self-calibration of a Stewart Parallel Robot with a Laserranger p. 570
Real-Time Binaural Sound Source Localization Using Sparse Coding and SOM p. 582
Design and Control of a Hydraulic-Actuated Leg Exoskeleton for Load-Carrying Augmentation p. 590
Computer Vision and Applications
Globally Optimal and Region Scalable CV Model on Automatic Target Segmentation p. 600
The Registration of UAV Down-Looking Aerial Images to Satellite Images with Image Entropy and Edges p. 609
Fast 3D Time of Flight Data Segmentation Using the U-V-Histogram Approach p. 618
Scale Invariant Feature Transform (SIFT) Parametric Optimization Using Taguchi Design of Experiments p. 630
Robust Visual Monitoring of Machine Condition with Sparse Coding and Self-Organizing Map p. 642
An Evolving Machinery Fault Diagnosis Approach Based on Affinity Propagation Algorithm p. 654
Closed Form Solution for the Scale Ambiguity Problem in Monocular Visual Odometry p. 665
Recognizing 3D Human Motions Using Fuzzy Quantile Inference p. 680
Evaluating the Fuzzy Coverage Model for 3D Multi-camera Network Applications p. 692
Emotion Recognition in Facial Image Sequences Using a Combination of AAM with FACS and DBN p. 702
Sensor Design, Multi-sensor Data Fusion
An Analysis of Node Localization Error Behavior in Wireless Sensor Networks p. 713
Consensus Target Tracking in Multi-robot Systems p. 724
A Decentralized Junction Tree Approach to Mobile Robots Cooperative Localization p. 736
Optimized Particles for 3-D Tracking p. 749
Design of a Finger-Tip Flexible Tactile Sensor for an Anthropomorphic Robot Hand p. 762
Author Index p. 775

Table of Contents provided by Blackwell's Book Services and R.R. Bowker. Used with permission.