

Automation: Cleaning, Construction, Agriculture

- Autonomous Cleaning Robot
- Motion Analysis of a Cleaner Robot for Vertical Type Air Conditioning Duct
- Virtual Fences for Controlling Cows
- Sensor Space Planning with Applications to Construction Environments
- The Low Cost Gripper Design for an Apple Picking Robot

Automation: Transportation

- On the Modeling of Robots Operating on Ships
- Implementation and Control of a Roadway Crack Tracking Mobile Robot with Force Regulation
- Cooperative Transportation of a Large Object - Development of an Industrial Application
- On-Board Vision System for Lane Recognition and Front-Vehicle Detection to Enhance Driver's Awareness
- Decentralized Kinematic Framework for Payload Transportation by a System of Mobile Manipulators

Automation: Medical Applications

- A Computational Technique for Interactive Needle Insertions in 3D Non-Linear Material
- Motion Therapy for Persons with Disabilities Using Hidden Markov Model Based Skill Learning
- Micro-/Nano-devices for Controlled Drug Delivery
- A Genetic Algorithm Based Area Coverage Approach for Controlled Drug Delivery Using Micro-Robots
- Effects of Visual Feedback Distortion for the Elderly and the Motor-Impaired in a Robotic Rehabilitation Environment

Automation: Biology

- Automating Crystallization of Membrane Proteins by Robot with Soft Coordinate Measuring
- A Nano-Liter Bio-Material Spotting System for Bio-Chip Micorarray Fabrication
- Robot Team Forming of Membrane Proteins in Crystallization
- Towards Optimal Strategies for Moving Droplets In
- Automation of Yeast Pedigree Analysis

Automation: Monitoring

- Development of Novel Intelligent On-line Monitoring and Diagnosis System
- Better Motion Prediction for People-tracking
- Gas Source Declaration with a Mobile Robot
- Bacterium-inspired Robots for Environmental Monitoring
- Development of a Web-services-based Remote Monitoring and Control Architecture

Automation: Security/Surveillance

- Object Surveillance Using Reinforcement Learning Based Sensor Dispatching
- A UAV Vision System for Airborne Surveillance
- Detection of Vehicles in Panoramic Range Image
- An Exact Algorithm Optimizing Coverage-Resolution for Automated Satellite Frame Selection
- Human Activities Monitoring at Bus Stops

Automation: Inspection

- Development of a Robot for the Detection of Plastic Dangerous Objects
- Sensor Based Robotics for Fully Automated Inspection of Bores at Low Volume High Variant Parts
- An Ultrasonic Profiling Method for Sewer Inspection
- Performance Development of a High-Speed Automatic Object Identification Using Passive RFID Technology
- Automated Pipe Inspection Using ANN and Laser Data Fusion

Automation: Service

- An Interactive Interface for Service Robots
- Implementation of Multi-Functional Service Robots Using Tripodal Schematic Control Architecture
- Integrated Navigation System for Indoor Service Robots in Large-Scale Environments
- Door Opening Control Using the Multi-Fingered Robotic Hand for the Indoor Service Robot
- Integrated Localization of the Service Robot PSR

Automation: Mine Mapping/Excavation

- 6D SLAM with an Application in Autonomous Mine Mapping
- Hybrid Model in a Real-time Soil Parameter Identification Scheme for Autonomous Excavation
- Configuration and Construction of an Autonomous Vehicle for a Mining Task
- A Campaign in Autonomous Mine Mapping

Automation: Demining

- Methods and Experiments for Hazardous Area Activities Using a Multi-Robot System
- Robotic System for Humanitarian Demining
- Development of Mechanical Master-Slave Hand for Demining Operation

Automation: Petri Nets

- Modeling and Analysis Manufacturing Systems Using a New Class of Petri Nets
- Deadlock-Free Scheduling Method for Automated Manufacturing Systems with Limited Central Buffers
- Deadlock-Free Scheduling Method for Automated Manufacturing Systems Using Genetic Algorithm and Petri Nets
- Modular Hybrid Petri Nets for Studying Multi-Operational Production Systems Where Parts Follow Multiple Alternative Processes
- Diagnosability of Discrete Event Systems. A Petri Net Based Approach

Automation: Systems

- Optimal Parking in Group Elevator Control
- Analysis of Self-Reconfigurable Modular Systems
- Development of Autonomous Rover for Asteroid Surface Exploration
- Using Augmented Reality to Interact with an Autonomous Mobile Platform
- Mapping and Localization with RFID Technology

Automation: Manufacturing Systems

- On-line Monitoring and Diagnosis System in Manufacturing Automation
- Performance Optimization of Manufacturing Systems
- Design of Control Programs for Efficient Handling of Errors in Flexible Manufacturing Cells
- Modeling and Analysis of a Multiple Product Manufacturing System with Split and Merge

Automation Supply Chains

- A Multiobjective Optimization Method for Strategic Sourcing and Inventory Replenishment
- Distributed Supply Chain Planning System for Several Companies Using a New Augmented Lagrangian Relaxation
- A Conceptual and Analytical Framework for the Management of Risk in Supply Chains
- Achieve Reliable Delivery in Supply Chains

Automation: Manufacturing Processes I

- Design of a New PumaPaint Interface and its Use in One Year of Operation
- Integrated Design of a Linear Positioning System with Applications to Electronic Manufacturing
- A Multi-Agent Cell Controller Integrating Temporal and Precedence Constraints
- Gap Sensing Benefits in Conform(TM) Extrusion Machinery
- Modeling and Control for a Gough-Stewart Platform CNC Machine

Automation: Manufacturing Processes II

- Design of Part Feeding and Assembly Processes with Dynamics
- The Development of a Direct Metallic Rapid Prototyping System
- Towards Automated Micromachining of PMMA Micro Channels Using CO2 Laser and Sacrificial Mask Process
- Optimal Spray Gun Trajectory Planning with Variational Distribution for Forming Process
- Optimal Tool Path Planning for Compound Surfaces in Spray Forming Processes