



Technical Program

Sunday 29 - June - 2003

1. Full-day Tutorial: MultiSensor Information Fusion (9.00 - 15.20)

2. Half-day Workshop: 1st Workshop on Integration of Vision and Inertial Sensors (INERVIS)

INERVIS – Session 1 (14.00 - 15.40)

An Inertial and visual Sensing System for a Small Autonomous Helicopter

Peter Corke (Australia)

Navigation aided image processing in UAV surveillance - Preliminary results and design of airborne experimental system

Jonas Nygård, Morgan Ulvklo, Per Skoglar, Tomas Höglström (Sweden)

Vision Based Intelligent Wheel Chair Control: the role of vision and inertial sensing in topological navigation

Toon Goedemé, Marnix Nuttin, Tinne Tuytelaars (Belgium), Luc Van Gool (Switzerland)

Fusing Visual Contour Tracking with Inertial Sensing to Recover Robot Egomotion

Guillem Alenyà (France), Elisa Martínez, Carme Torras (Spain)

Coffee Break (15.40 - 16.00)

INERVIS – Session 2 (16.00-18.50)

A Flexible Software Architecture for Hybrid Tracking

Miguel Ribo, Markus Brandner, Axel Pinz (Austria)

Inertial Sensed Ego-motion for 3D vision

Jorge Lobo, Jorge Dias (Portugal)

Omnidirectional Vision and Inertial Clues for Robot Navigation

Irem Stratmann, Erik Solda (Germany)

Fusion of Vision and Inertia Data for Motion and Structure Estimation

Stefan Chroust, Markus Vincze (Austria)

Online Motion Estimation from Image and Inertial Measurements

D.Strelow, S.Singh (USA)

Principles of Fusion of Inertial Navigation and Dynamic Vision

Stevica Graovac (Serbia and Montenegro)

INERVIS - Discussion Panel (18.50-19.15)

Towards Applications of Inertial and Vision Sensing Integration

Moderator: Peter Cork (CSIRO, Kenmore, Australia)

Monday 30 - June - 2003

Registration (8.00 – 9.00)

Opening Ceremony (9.00 – 9.30)

Plenary Lecture 1 (9.30 – 10.30)

Perspectives of Biomedical Robotics

Paolo Dario (Scuola Superiore Sant'Anna, Italy)

Coffee Break (10.30 – 10.50)

MI-1

Biomedical Robotics 1 (10.50 – 12.30)

The Robotic Appliance: The Next Generation Personal Assistant?

M. J. Johnson, E. Guglielmelli, G. A. Di Lauro, C. Laschi, A. Pisetta, G. Giachetti, C. Suppo, Y. Perella, M. Carrozza and P. Dario (Italy)

A Shoulder Joint Motion Support System for Rehabilitation and Daily Activity

K. Kiguchi, K. Iwami, K. Watanabe, T. Fukuda (Japan)

A Geometric Method for Robot Workspace Computation

D. Botturi, P. Fiorini and S. Martelli (Italy)

Kinematic and Dynamic Model of Haptic Device for Finger Exercise

Uros Mali and M. Munih (Slovenia)

MI-2

Mobile Robots 1 (10.50 – 12.30)

Environment Mapping as a Topological Representation

Alberto Vale and M.I. Ribeiro (Portugal)

Autonomous Communication Relays for Tactical Robots

H.G. Nguyen, N. Pezeshkian, M. Raymond, A. Gupta and J.M. Spector (USA)

A Software Framework for Control of Multi-Sensor, Multi-Actuator Systems

B.J. Waarsing, M. Nuttin and H. Van Brussel (Belgium)

Mobile Robot Positioning with Natural Landmark

E. Santiso, M. Mazo, J. Ureña, J.A. Jiménez, J.J. Garcia and M. Serra (Spain)

Traversable Regions Model for Outdoor Robots

C. Castejón, B.L. Boada, D. Blanco and L. Moreno (Spain)

MI-3

Sensor Systems and Sensor Fusion (10.50 – 12.30)

Ultrasonic Local Mapping Algorithms Evaluation

Granit Zohar, Cohen Ofir and Edan Yael (Israel)

Fusion of Lidar and Stereo Range for Mobile Robots

K. Nickels, A. Castaño and C. Cianci (USA)

3-D Land Vehicle Localization: a Real-time Multi-Sensor Data Fusion Approach using RTMAPS

I. Abuhadrous, F. Nashashibi and C. Laugeau (France)

Map Building for Mobile Robots by High-Resolution Ultrasonic Sensing

Dirk Bank (Germany)

Design of a Low-Power Motion Tracking System

K. Nickels, C. Divin, J. Frederick, L. Powell, C. Soontornvat and J. Graham (USA)

MI-4 (10.50 – 12.30)**Telerobotics 1**

PdaDriver: A Handheld System for Remote Driving

T. Fong, C. Thorpe, B. Glass (USA)

Advanced Methods for Efficient Internet-based Robot Control

I. Belousov (Russia), M. Devy, R. Alami (France), V. Sazononov and S. Chebukov (Russia)

A New Control Method of Teleoperators with Time Delay

J.M. Azorín, O. Reinoso, J.M. Sabater, C. Pérez and R. Aracil (Spain)

Easy-to-Use Telepresence and Home Aid Robot

T. Vallius, J. Rönning (Finland)

Experience in Teleoperation System Design based on Real-Time CORBA

M. Amoretti, S. Bottazzi, M. Reggiani and S. Caselli (Italy)

MI-5 (10.50 – 12.30)**Localization 1**

Object Localization in Omniscient Spaces

N. Young Chong, Hiroshi Hongu and Kazuo Tanie (Japan)

On the Use of Disparity Maps for Robust Robot Localization under

Different Illumination Conditions

J.M. Porta and Ben Kröse (The Netherlands)

A Rigorous Bayesian Approach to Simultaneous Model Selection and

State Estimation

K. Gadeyne, T. Lefebvre, H. Bruyninckx and J. De Schutter (Belgium)

Non-linear Autonomous Compliant Motion with a Non-minimal State

Kalman Filter

T. Lefebvre, H. Bruyninckx and J. De Schutter (Belgium)

Mobile Robot Localization using Laser Ranging and a Multi-component Landmark

C.F. Ferreira, V.M. Santos (Portugal)

MI-6 (10.50 – 12.30)**Soft Computing**

Pattern Classifiers Based on Soft Computing and Their FPGA

Integration for Intelligent Behavior Control of Mobile Robots

O. Azouaoui (Algeria) and A. Chohra (France)

Active Vibration Control of a Single Link Flexible Manipulator using Tools of

Fuzzy Logic and Neural Networks

W. Andrews and A. Jnifene (Canada)

A Patterns-Oriented Framework for the Development of Sequential

Movement Skills for Indoor Mobile Robots

D.M. Rivero, A. Khamis, F.J. Rodríguez and M.A. Salichs (Spain)

A Development Approach to Industrial Robots Programming

G.V. Arnold, P.R. Henriques and J.C. Fonseca (Portugal)

Lunch (12.35 – 13.50)

MII-1 (13.50-15.10)

Biomedical Robotics 2

Haptic Environment for Analysis of Smooth Arm Movements

M. Ponikvar, M. Munih (Slovenia), J. Hoogen, G. Schmidt and R. Riener (Germany)

Force Feedback Using Vision

C.W. Kennedy and J.P. Desai (USA)

On the Use of Robotic Devices for Neurorehabilitation after Stroke

*S. Micera, M. Chiara Carrozza, E. Guglielmelli, L. Barboni
F. Zaccone, C. Freschi and P. Dario (Italy)*

MEDICATE Teleassistance System

M. Governo, V. Riva, P. Fiorini (Italy) and C. Nugent (Northern Ireland)

MII-2 (13.50-15.10)

Mobile Robots 2

Motion Control of a Mobile Robot Transporting a Large Size Object in

Cooperation with a Human: a Nonlinear Dynamical Systems Approach

E. Bicho, L. Louro, N. Hipólito, S. Monteiro and W. Erhagen (Portugal)

Mobile Robot Navigation via Reference Recognition Based on Ultrasonic

Sensing and Monocular Vision

M. Sarcinelli-Filho, T.F. Bastos-Filho and R.A. Freitas (Brazil)

Configuration Space of 3D Mobile Robots: Parallel Processing

Roberto Theron, Vidal Moreno, Belen Curto and F. Javier Blanco (Spain)

Topological Robot Navigation using Multisensorial Event Based POMDPs

E. López, L.M. Bergasal, R. Barea and M.S. Escudero (Spain)

MII-3 (13.50-15.10)

Sensor Based Planning

Planning Robot Motion for 3D Digitalization of Indoor Environments

A. Nüchter, H. Surmann and J. Hertzberg (Germany)

A Motion Planning Strategy to Maintain Visibility of a Moving Target at

a Fixed Distance in a Polygon

R. Murrieta, A. Sarmiento and S.A. Hutchinson (USA)

A Strategy for Searching an Object with a Mobile Robot

A. Sarmiento, R. Murrieta and S.A. Hutchinson (USA)

Sensor-based Path Planning for a Mobile Manipulator Guided by the Humans

D. Blanco, B.L. Boada, C. Castejon, C. Balaguer and L. Moreno (Spain)

MII-4 (13.50-15.10)

Fractional Derivatives in Mechatronics and Robotics 1

The CRONE robustness measure

P. Ostalczyk and T. Rybicki (Poland)

Fractional Sliding Mode Control of a DC-DC Buck Converter with

Application to DC Motor Drives

A.J. Calderón, B.M. Vinagre and V. Feliú (Spain)

Tuning of an Active Suspension System using a Fractional Controller

and a Closed-Loop Tuning

P. Lanusse, T. Poinot, O. Cois, A. Oustaloup and J.C. Trigeassou (France)

Fractional Order Dynamics in a Genetic Algorithm

E. Solteiro Pires, J. Tenreiro Machado and P. de Moura Oliveira (Portugal)

MII-5 (13.50-15.10)
Localization 2

A Genetic Solution for the SLAM Problem

B.L. Boada, D. Blanco, C. Castejón and L. Moreno (Spain)

Robust Mobile Robot Localization by Fusing Laser and Sonar

Z. Xiang, V.M. Santos (Portugal), Jilin Liu (China)

Filter/Smoother Localization for Outdoors Applications

Amit Brandes (Italy)

Spatial Localization Method with Omnidirectional Vision

C. Cauchois, E. Brassart, L. Delahoche and C. Drocourt (France)

MII-6 (13.50-15.10)
Learning 1

Noncausal Iterative Learning Control for Uncertain LTI Systems

P.B. Goldsmith (Canada)

Learning to Navigate using a Lazy Map

S.H. ten Hagen and B.J. Kröse (The Netherlands)

Learning Autonomous Helicopter Control from a Pilot

G. Buskey, J. Roberts and G. Wyeth (Australia)

Perception Control of Robots: Nonlinear Expectation Learning

Through RBF Neural Networks

K. Izumi, S. Guirnaldo, K. Watanabe and K. Kiguchi (Japan)

Coffee Break (15.10 - 15.30)

MIII-1 (15.30 - 16.50)

Networked and Cooperative Robotics 1

The Player/Stage Project: Tools for Multi-Robot and Distributed

Sensor Systems

B.P. Gerkey, R.T. Vaughan and A. Howard (USA)

Compact Encoding of Robot-Generated 3D Maps for Efficient Wireless

Transmission

M.Kaess, R.C. Arkin and J. Rossignac, (USA)

Building a Decentralized Active Sensor Network

A. Makeyenko, E. Nettleton, B. Grocholsky, S. Sukkarieh, H. Durrant-Whyte (Australia)

The Module Pool: Building Blocks for Networked Robotics

G.T. McKee, D.I. Baker (UK) and P. Schenker (USA)

MIII-2 (15.30 - 16.50)

Vision 1

Saliency Detection for Vision-Based Robot Navigation

E. Celaya (Spain)

Motion Analysis and Geo-location for Aerial Monitoring in the COMETS Multi-UAV System

L. Merino, A. Ollero, J. Ferruz, J.R. Martínez-de-Dios and B.C. Arrue (Spain)

Visual Servoing and Force Control Fusion for Complex Insertion Tasks

J. Pomares, F. Torres and Pablo Gil (Spain)

3-D Object/Human Detection Using Fiber Grating Vision Sensor

Maki K. Habib (Malaysia)

MIII-3 (15.30 - 16.50)**Olfaction-Based Mobile Robot Navigation 1**

Spherical Gas-Sensor Array for Three-Dimensional Plume Tracking

H. Ishida, M. Tsuruno, K. Yoshikawa and T. Moriizumi (Japan)

Experimental Analysis of Smelling Braitenberg Vehicles

Achim Lilienthal and Tom Duckett (Germany)

Navigation Strategies for a Robot in a Turbulent Odor Plume using Bilateral Comparison

E. Hugues, O. Rochel and D. Martinez (France)

MIII-4 (15.30 - 16.50)**Fractional Derivatives in Mechatronics and Robotics 2**

Optimisation of Non-integer Order Control Parameters for a Robotic Arm

D. Valério and J. Sá da Costa (Portugal)

Fractional-Order Hybrid Control of Robotic Manipulators

N.M. Fonseca Ferreira and J.A. Tenreiro Machado (Portugal)

ZV and ZVD Shapers for Explicit Fractional Derivative Systems

A. Poty, P. Melchior, B. Orsoni, F. Levron and A. Oustaloup (France)

Spatial Path Tracking of an Autonomous Industrial Vehicle using Fractional Order Controllers

J.I. Suárez, B.M. Vinagre (Spain) and Y.Q. Chen (USA)

MIII-5 (15.30 - 16.50)**Localization 3**

Fast Markov Localization using Angle-Histogram

Jung-Hyun Moon, Bum-Jae You, Hagbae Kim and Sang-Rok Oh (Korea)

Performance Evaluation of Incremental Eigenspace Models for Mobile Robot Localization

R. Freitas, J. Santos-Victor, (Portugal) M. Sarcinelli-Filho and T. Bastos-Filho (Brazil)

Heading Estimation for Kalman Filter Based Localization: Analysis and Experiments

P. García, D. Alvarez, R.C. González and J.C. Alvarez (Spain)

Agent-based Multimodal Interface for Dynamically Autonomous Mobile Robots

D. Sofge, M. Bugajska, W. Adams, D. Perzanowski and A. Schultz (USA)

MIII-6 (15.30 - 16.50)**Learning 2**

Intention Recognition for Vehicle Driving by Time-series Pattern Learning

I. Eguchi Yairi, Takehisa Yairi and Seiji Igi (Japan)

Suboptimal Output Regulation of Robotic Manipulators by Iterative Learning

P. Lucibello, S. Panzieri and F. Pascucci (Italy)

Learning to Adapt: A Network and Learning Algorithm for Flexible Robotic Control

E. J. Earon and G.M. D'Eleuterio (Canada)

Hierarchical Spatio-Temporal Morphable Models for Representation of

Complex Movements for Imitation Learning

Winfried Ilg, G. Bakir, Matthias Franz and Martin Giese (Germany)

Coffee Break (16.50 - 17.10)

MIV-1 (17.10 - 18.10)

Networked and Cooperative Robotics 2

An Integrated System for Command and Control of Cooperative Robotic Systems

C. Clark, Eric Frew, Henry Jones and S. Rock (USA)

Localization and Tracking in Robot Networks

G. Pereira (Brazil), V. Kumar (USA) and M. Campos (Brazil)

Experiments in Monte-Carlo Localization using WiFi Signal Strength

S.M. Siddiqi, G.S. Sukhatme and A. Howard (USA)

MIV-2 (17.10 - 18.10)

Obstacle Avoidance

Obstacle Detection Methods for Stereo Vision as Driving Aid

G. Györy (France)

Shape Adaptation of Planar Hyper-redundant Manipulators to Narrow and Unknown Environment using Proximity Sensors

H. Tani, K. Inoue, T. Arai and Yasushi Mae (Japan)

Collision Avoidance System for Two Tracked Mobile Robots Transporting a Single Object in Coordination Based on Function Allocation Concept

- Utilization of environmental information by visual sensor -

H. Takeda, Zhi-Dong Wang and K. Kosuge (Japan)

MIV-3 (17.10 - 18.10)

Olfaction-Based Mobile Robot Navigation 2

Odour Searching with Autonomous Mobile Robots: An Evolutionary-based Approach

L. Marques, U. Nunes and A.T. de Almeida (Portugal)

Olfactory Coordinated Area Coverage

S. Larionova, N. Almeida, L. Marques, A.T. de Almeida (Portugal)

Gas Distribution in Unventilated Indoor Environments Inspected by a Mobile Robot

M. Wandel, A. Lilienthal, T. Duckett (Sweden), U. Weimar and A. Zell (Germany)

MIV-4 (17.10 - 18.10)

Telerobotics 2

Robust and Adaptive Teleoperation for Compliant Motion Tasks

J. Park (USA), R. Cortesão (Portugal) and O. Khatib (USA)

Prediction of Delay Time for Teleoperation Systems in Augmented Wave

Variables and Smith Predictor

S. Ganjefar, H. Momeni (Iran), F. Janabi-Sharifi (Canada), M. Hamidi Beheshti (Iran)

Robot Modelling on Dynamic Teleoperation Virtual Environments

J.M. Sabater, J. M. Azorín, O. Reinoso, R.P. Neco and N.M. Garcia (Spain)

MIV-5 (17.10 - 18.10)

Demining Robotics

Conceptual Design of an Excavation-type Demining Robot

Y. Mori, T. Takayama and T. Nakamura (Japan)

URSULA: Robotic Demining System

J. Rizo, J. Coronado, C. Campo, A. Forero and C. Otálora (Colombia),

M. Devy (France) and C. Parra (Colombia)

Humanitarian Demining Technologies in Russia

A. Livshitz, E. Petrenko and M. Rachkov (Russia)

MIV-6 (17.10 - 18.10)
Kinematics 1

Direct Kinematics of a Class of 3-DOF Parallel Manipulators
R. Di Gregorio (Italy)

Variation of the Bending Locations Within a Robot Manipulator
Ian D. Walker and C. Carreras (Spain)

Dimensional Synthesis of RPC Serial Robots
Alba Perez, J. Michael McCarthy (USA)

Visits, Exhibitions & Demos (18.10 - 19.30)

Welcome Reception (19.45)

Tuesday 01 - July - 2003

Plenary Lecture 2 (8.30 - 9.30)

A New Trend of Current Robotics Technology and the Possibility of New Robotics Business
Kazuo Tanie (Director of the Intelligent Systems Institute, the National Institute of Advanced Industrial Science and Technology, Japan)

Technical Break (9.30 - 9.35)

TI-1 (9.35 - 10.55)

Biologically-Inspired/Humanoid Robotics 1

A Multi-Agent Approach to Self-Reflection for Cognitive Robotics
K. Kawamura, D. Noelle, K. Hambuchen, T. Rogers and E. Turkay (USA)

Biologically Inspired Robot Design and Modeling
B. Klaassen, R. Linnemann, D. Spenneberg and F. Kirchner (Germany)

MIRO: an Embedded Distributed Architecture for Biologically Inspired Mobile Robots
A. Weitzenfeld (Mexico), S. Gutierrez-Nolasco and N. Venkatasubramanian (USA)

Design and Development of an Animatronic Face
C. Nowakowski and S. Shooter (USA)

TI-2 (9.35 - 10.55)

Mobile Robots 3

Towards Mapping Dynamic Environments
D.F. Wolf and G.S. Sukhatme (USA)

Reconfigurable Architecture Proposal Applied to Mobile Robots
J.M. Rosário, R.C. Erig Lima (Brazil) and D. Dumur (France)

Self Localization of a Hopping Robot in Unknown Environment
C. Cosma and P. Fiorini (Italy)

Local Positioning System (LPS) for Indoor Environments Using a Camera Array
I. Fernández, M. Mazo, J. L. Lázaro, P. Martín and S. García (Spain)

TI-3 (9.35 - 10.55)

Robotic Applications

Full Automatic Poultry Deboning System

H. Hayakawa (Japan), and R. Kodama (Belgium)

An Architecture and Communication Protocol for Interaction of Industrial Robots and Vision Systems

Michael Gaub, A. Bürkle, T. Längle, Heinz Wörn (Germany)

Robot Vision System with Gray-scale Image and Range Image for Outdoor Electricity Distribution Work

S. Murakami, T. Hasegawa, Y. Hashiguchi, T. Irie and J. Goto (Japan)

Electro-stimulation of the Tongue as a Passive Surgical Guiding System

J.O. Vazquez-BuenosAires, Y. Payan and J. Demongeot (France)

TI-4 (9.35 - 10.55)

Humans and Robots 1

Strategies for Safety in Human Robot Interaction

D. Kulic and E. Croft (Canada)

Preliminary-Announcement Function of Mobile Robot's Following Motion by using Omni-directional Display

T. Matsumaru, K. Iwase, T. Kusada, K. Akiyama, H. Gomi and T. Ito (Japan)

Firefighter-Robot Interaction during a Hazardous Materials Incident Exercise

A. Brando and C. Chang (Venezuela)

TI-5 (9.35 - 10.55)

Motion Planning

Trajectory Generation Design for Underwater Vehicles

S.L. Fraga, J. Borges Sousa and F. Lobo Pereira (Portugal)

Improving Probabilistic Roadmap Planners for Robot Motion Planning

A. Sanchez and R. Zapata (France)

Motion Operation of a Robot for Restraining the Impact Force

Y. Mori and T. Nkamura (Japan)

Adaptive Strategies for Probabilistic Roadmap Construction

P. Isto, J. Tuomine and M. Mäntylä (Finland)

TI-6 (9.35 - 10.55)

Multirobot Systems 1

Smooth and Flexible Trajectory Planning of Multiple Wheeled Robot Systems

Y. Yamamoto, H. Kanai and Y. Hiyama (Japan)

PERA: Ad-hoc routing protocol for mobile robots

C. Agüero, V. Matellán, P. de-las-Heras-Quirós and J.M. Cañas (Spain)

Minimally Compliant Trajectory Resolution for Robotic Machining

W.S. Owen, E. Croft and B. Benhabib (Canada)

Biologically Inspired Stochastic Hybrid Control of Multi-Robot Systems

D. Milutinovic, P. Lima and M. Athans (Portugal)

Coffee Break (10.55 - 11.15)

TII-1 (11.15 - 12.35)

Biologically-Inspired/Humanoid Robotics 2

A Biomorphic Simulator of Three-dimensional Eye Movements

Y.B. Bang, B.H. Shin, Jamie K.Paik and C.Lee (Korea)

The Biomimetic Design of 'Soft' Mechatronic Systems

S. Davis, P. Tresadern, J. Canderle, N.G. Tsagarakis, P. Dodd and D.G. Caldwell (UK)

OSCAR and OCTAVE : Two bio-inspired visually guided aerial micro-robots

F. Ruffier, S. Viollet and N. Franceschini (France)

A Robot in a Box

A.M. Arsenio (USA)

TII-2 (11.15 - 12.35)

Mobile Robots 4

Efficient Parametric Synthesis of Optimal Mobile Robot Trajectories

A. Kelly (USA)

Mobile Robot Control via Pseudolinearisation

A. Tsourdos, J.T. Economou, B.A. White and P.C.K. Luk (UK)

Topological Navigation Based on Intersection Graphs of Landmark Visibility Regions

H. Peremans and P. Veelaert (Belgium)

Control and Localisation for the ISePorto Robotic Soccer Team

J. M. Almeida, A. Martins and E.P. Silva (Portugal)

TII-3 (11.15 - 12.35)

Control 1

Stability of Robotics Systems with Force Control and Time Delay

Igor Zeidis, K. Zimmermann and A. Schneider (Germany)

End-Effector Velocity Effects on Robotic Manipulator Dynamic

Performance: an Analytical Approach

C.H. Kim and A. Bowling (USA)

Neural Adaptive Controller for Redundant Robot Manipulators with Obstacles Avoidance

B. Daachi, A. Benallegue and T. Madani (France)

Spin Systems, Time Optimality and Minimal Switching Decompositions

J. Clemente-Gallardo and F. Silva Leite (Portugal)

TII-4 (11.15 - 12.35)

Humans and Robots 2

Motion Algorithm for a Robot that does not tire a Human

Y. Mori, Koji Ota and T. Nakamura (Japan)

EyeBall Expression for Preliminary -Announcement of Mobile Robot's Following Motion

T. Matsumaru, K. Akiyama, K. Iwase, T. Kusada, H. Gomi and T. Ito (Japan)

Tactile Commanding of Mobile Manipulators Using Force/Torque Gestures

M. Neumann and Günter Hommel (Germany)

Estimating Intent for Human -Robot Interaction

D. Kulic and E. Croft (Canada)

TII-5 (11.15 - 12.35)**Vision-Based Navigation**

Lane Extraction and Tracking for Robot Navigation in Agricultural Applications

G. Aviña-Cervantes, M. Devy and A. Marin-Hernandez (France)

Traffic Signs Identification, the ICE-TOPIA System

C. Simplicio and J. Dias (Portugal)

A Real-Time Geometrical Obstacle Detection Algorithm for a Monocular Mobile Robot

T. Kowsari, M.N. Ahmadabadi and H. Soltanian Zadeh (Iran)

Vision Based Navigation using Kalman Approach for SLAM

S. Panzieri, F. Pascucci and G. Ulivi (Italy)

TII-6 (11.15 - 12.35)**Multirobot Systems 2**

Assessing Information Utility in Cooperation-based Robotic Systems

R. Rocha, J. Dias and Adriano Carvalho (Portugal)

Distributed Manipulation Systems: A Review From Multi-Agent Systems Perspective

Qingguo Li and S. Payandeh (Canada)

Co-evolution and Experience Exchange in a Group of Robots

Ales Kubík (Czech Republic)

An AGV-Routing Algorithm in the Mesh Topology with Random Partial Permutation

Z. Jianyang, H. Wen-Jing and V. Voon Yee (Singapore)

Lunch (12.35-13.50)**TIII-1 (13.50-15.30)****Mobile Robots 5**

Model-Free Execution Monitoring in Behavior-Based Mobile Robotics

O. Pettersson, L. Karlsson and A. Saffiotti (Sweden)

A Control System Based on Reactive Skills for Autonomous Mobile Robots

M.J. Boada, F.J. Rodriguez, R. Barber and M.A. Salichs (Spain)

Robust Low-Level Motion Control of WMR with Stochastic Active Observers

R. Maia, R. Cortesão, U. Nunes, V. Silva and J.A. Fonseca (Portugal)

Qutie - an Interactive Mobile Robot

A. Tikanmäki, J. Riekkki and J. Röning (Finland)

Research on Navigation Based on Multi-Sensor Fusion and Dynamic

Window for a Mobile Robot

Guosheng Yang, Xijun Chen, Z. Hou and Min Tan (China)

TIII-2 (13.50-15.30)**Medical/Biomedical Robotics**

Modelling and Control of Antropomorphic Gripper in Industrial Robot

J. M. Rosário and E. R. Cassemiro (Brazil)

Research on Visualization of Robotic Endoscope Body in Examination

Jiaqi Wu, Dongying Yang and Jinwu Qian (China)

Kinematics of a Dedicated 6DOF Robot for Tele-echography

L. Al Bassit, G. Poisson and P. Vieyres (France)

Non-contact Eye Gaze Estimation System using Robust Feature

Extraction and Mapping of Corneal Reflections

Dong Hyun Yoo and Myung Jin Chung (Korea)

TIII-3 (13.50-15.30)

Control 2

Neural Networks (NN) Using Genetic Algorithms (GA) and Gradient

Back-Propagation (GBP) for an Intelligent Obstacle Avoidance Behavior

A. Chohra (France) and O. Azouaoui (Algeria)

An Operational Space Robotic Observer-Controller for Trajectory Tracking

Qing Hua Xia, Ser Yong Lim and Marcelo H Ang Jr (Singapore)

Modelling and Control of a Pneumatic Muscle Actuated Joint Using

On/Off Solenoid Valves

N.G.Tsagarakis, V.A.Tsachouridis, S. Davis and D.G.Caldwell (UK)

A Newton-Euler Model of a Piezo-Actuated Nonlinear Elastic Link

J.M. Martins, M.A. Botto and J. Sá da Costa (Portugal)

Analysis of Systematic Errors in Robot Load Identification

W. Verdonck and J. Swevers (Belgium)

TIII-4 (13.50-15.30)

Humans and Robots 3

The ADAH System for Augmenting the Performance and Safety of

Astronauts during Extra Vehicular Activities (EVAs)

F. Vecchi, M. C. Carrozza, S. Roccella, L. Barboni (Italy),

F. Didot, G. Visentin (The Netherlands) and P. Dario (Italy)

Fast Face Detection for Mobile Robots by Integrating Laser Range Data with Vision

J. Blanco (Spain), W. Burgard (Germany), R. Sanz and J.L. Fernandez (Spain)

Wavelet-based Indoor Object Recognition through Human Interaction

QingHua Wang and L. Seabra Lopes (Portugal)

Patterns of Skill Transfer for Human-Robot Interaction

M. Ralph and M. Moussa (Canada)

Visual Tracking of Silhouettes for Human-Robot Interaction

P. Menezes (Portugal), L. Brèthes, F. Lerasle, P. Danès (France) and J. Dias (Portugal)

TIII-5 (13.50-15.30)

Vision 2

Stereo Visual Servoing with Oriented Blobs

E. Cervera (Spain), F. Berry and P. Martinet (France)

A Bayesian Approach for Color Constancy based Visual Servoing

G. De Cubber, S. A. Berrabah and H. Sahli (Belgium)

Vision-based Control with Respect to Planar and Non-planar Objects

using a Zooming Camera

S. Benhimane and Ezio Malis (France)

GAG (Gaining Angle of Gaze) Strategy for Ball Tracking and Catching

Task -Implementation of GAG to a Mobile Robot-

Ryosuke Mori and F. Miyazaki (Japan)

Detection of Sudden Changes in the Target Motion for Visual Servoing

S. Chroust and M. Vincze (Austria)

TIII-6 (13.50-15.30)

Walking Robots

CPG-based Bio-gate Research of the Quadrupedal Robot
Zhang Xiuli, Zheng Haojun, Duan Guanghong and Wang Jinsong (China)

A New Dynamic Energy Stability Margin for Walking Machines
Elena Garcia and P. Gonzalez de Santos (Spain)

A Practical Hybrid Approach for Gaits Planning of a 4-Legged
Robot Using Genetic Algorithm
Aria Alasty and B. Borujeni (Iran)

Slip Detection and Trajectory Correction for Walking Robots Using
Optical Sensors
I. Hiroshi and K. Masayoshi (Japan)

Posture Control and Distributed Force Sensing for Technical Applications
of Walking Robots
Thomas Ihme (Germany)

Coffee Break (15.30 - 15.50)

TIV-1 (15.50 - 17.30)

Mobile Robots 6

Incremental Feature-based Pose Tracking for a Mobile Robot
J. Bitterling, S. Küpper and B. Mertsching (Germany)

Global Localization for Mobile Robots in Indoor Environment
Xu Zezhong (China), Xiang Zhiyu and Liu Jilin (Portugal)

Moving Safely but not Slowly - Reactively Adapting Paths for Better
Trajectory Times
K. MadhavaKrishna, R. Alami and T. Simeon (France)

A Robust System for Localization and Mapping While Navigating
A. Burguera, Y. González and G. Oliver (Spain)

Design and Modeling of a Stair Climber Smart Mobile Robot (MSRox)
M. Moradi Dalvand and M. Moghaddam (Iran)

TIV-2 (15.50 - 17.30)

Rehabilitation Robotics

Development of an Ultrasonic Motor for a Walking Assistance System
E. Purwanto and S. Toyama (Japan)

Light Weight Autonomous Service Robot for Disable and Elderly People
Help in their Living Environment
A. Gimenez, A. Jardon and C. Balaguer (Spain)

Evaluation of a "Soft" Exoskeleton for Rehabilitation and Physiotherapy of the Upper Limb
S. Kousidou, N.G. Tsagarakis and D.G. Caldwell (UK)

Development of A Novel Omnidirectional Microrobot
Tao Zhu, Dalong Tan and J. Zhang (China)

Development and Control of a Physiophery and Training
Exercise Facility for the Upper Limb using Soft Actuators
N.G. Tsagarakis and D.G. Caldwell (UK)

TIV-3 (15.50 - 17.30)**Multiple Robots in Dynamic Environments**

Self-Reconfigurable Sensor Networks in Ageless Aerospace Vehicles

P. Wang, P. Valencia, M. Prokopenko, D. Price and G. Poulton (Australia)

Value-Based Observation with Robot Teams (VBORT) Using Probabilistic Techniques

A.W. Stroupe and Tucker Balch (USA)

RoboFlag – A Framework for Exploring Control, Planning, and Human Interface Issues

Related to Coordinating Multiple Robots in a Realtime Dynamic Environment

Atif I. Chaudhry, R. D'Andrea and M. Campbell (USA)

RoboAKUT: A Multi-agent Rescue Team

B. Talaysüm and H. Levent Akin (Turkey)

Multi-robot Decision Making using Coordination Graphs

J.R. Kok, M.T. Spaan and N. Vlassis (The Netherlands)

TIV-4 (15.50 - 17.30)**Mobile Robots and Sensors**

Navigation System for Mobile Robots using RFID tags

T. Tsukiyama (Japan)

Using the Amplitude of Ultrasonic Echoes to Classify Detected Objects in a Scene

M. Martínez, G. Benet, F. Blanes, P. Perez and J.E. Simó (Spain)

A Fast and Robust 3D Feature Extraction Algorithm for Structured

Environment Reconstruction

J. Weingarten, G. Gruener and R. Siegwart (Switzerland)

An Intelligent Sensor Architecture for Mobile Robots

P. Pérez, J.L. Posadas, G. Benet, F. Blanes and J.E. Simó (Spain)

TIV-5 (15.50 - 17.30)**Vision 3**

A Hybrid Visual Servoing Method with Stereo Camera for Door Opening

Sung-Kee Park, Myoungsoo Han, Soon-Geul Lee and Munsang Kim (Korea)

Line Following Visual Servoing for Aerial Robots Combined with Complementary Sensors

G.F. Silveira (Brazil), J.R. Azinheira (Portugal), P. Rives (France) and S. Bueno (Brazil)

The Improved Algorithm to Compute the Optical Flow in the Wide Angle

High Distortion Lens System

Qiang Gao, Jianming Yang and Y. Suematsu (Japan)

Self-Organizing Maps Approach to Object Localization in Sonar Imagery

P. Amornrit and B. Jouvencel (France)

Real-Time Object and Face Tracking with Gabor Wavelets

A. Mojaev and A. Zell (Germany)

TIV-6 (15.50 - 17.30)**Compliant Motion Control**

Stiffness Control of Tendon Driven Multi-DOF Joint by the Actuator with

Non Linear Elastic System (ANLES)

K. Koganezawa and Y. Shimizu (Japan)

Contour Tracking Based on Force Sensing with an Industrial PUMA Robot

S.P. Fernandes, L.F. Baptista and J. Sá da Costa (Portugal)

Generalized Cooperative Impedance Control of Dual-arm for Assembly Task

N. Derragui, M. Kadri and B. Bouzouia (Algeria)

On the Impedance Parameter Selection for Robot Force Control

F.M. Campos, J.M. Calado, L.F. Baptista and J. Sá da Costa (Portugal)

A New Framework for Task Oriented Sensor Based Robot Programming and Verification

K. Diethers, T. Firley, T. Kröger and U. Thomas (Germany)

Visits, Exhibitions & Demos (17.30 - 19.00)**Wednesday 02 - July - 2003****Plenary Lecture 3 (8.15 - 9.00)**

Marine Robots: from Theory to Practice

Antonio Pascoal (IST, Technical University of Lisbon, Portugal)

Technical Break (9.00 - 9.05)**WI-1 (9.05 - 10.45)****Space and Aerial Robotics**

A Rotorcraft Micro Air Vehicle for Indoor Applications

M. Kemper, M. Merkel and S. Fatikow (Germany)

Image Processing for Asteroid Exploration Mission MUSES-C

T. Kubota, T. Hashimoto and J. Kawaguchi (Japan)

Terrain Following Preview Controller for Model-scale Helicopters

G. Libório, N. Paulino, R. Cunha, C. Silvestre and M.I. Ribeiro (Portugal)

Shadow Range Finder for Tele-sampling on Planetary Surface

Y. Kunii, S. Tsuji and M. Watari (Japan)

A Real-Time Rover Executive Based on Model-Based Reactive Planning

M.B. Dias (USA), S. Lemai (France) and N. Muscettola (USA)

WI-2 (9.05 - 10.45)**Robots and Art**

Using Haptics and a "Virtual Mirror" to Exhibit Museum Objects with Reflective Surfaces

*M. Lazzari, A. Francois, M.L. McLaughlin, J. Jaskowiak, W.L. Wong,
M. Akbarian, E. Elaine Kang, W. Peng and W. Zhu (USA)*

Interactive Tele-presence in Populated Exhibitions through Web-operated Robots

*P. Trahanias (Greece), W. Burgard, D. Hähnel, M. Moors,
D. Schulz (Germany), H. Baltzakis and A. Argyros (Greece)*

Art Touch with CREATE Haptic Interface

*A. Dettori, C.A. Avizzano, S. Marcheschi, M. Angerilli, M. Bergamasco (Italy),
C. Loscos and A. Guerraz (UK)*

The Museum of Pure Form

M. Bergamasco, A. Frisoli and F. Barbagli (Italy)

WI-3 (9.05 - 10.45)
Mobile Robots 7

Characterisation of an Ultrasonic Sensor Designed to Identify

Reflectors in 3D Environments

J.A. Jiménez, J. Ureña, M.I Mazo, E. Santiso, A. Hernández and F.J. Meca (Spain)

Fine Motion Planning for Shared Wheelchair Control: Requirements

and Preliminary Experiments

E. Demeester, M. Nuttin, D. Vanhooydonck and H. Van Brussel (Belgium)

Roaming Stripes: Integrating Path Planning and Reactive Navigation in

a Partially Known Environment

A. Sgorbissa and R. Zaccaria (Italy)

Comparison and Fusion of Odometry and GPS Navigation for an Outdoor Mobile Robot

A. Moutinho and J. Raul Azinheira (Portugal)

A New Global Fuzzy Path Planning and Obstacle Avoidance Scheme for Mobile Robots

V. Meigoli, S. Kamalodin, Y. Nikravesh and H.A. Talebi (Iran)

WI-4 (9.05 - 10.45)
Intelligent Vehicles

Nonlinear Path Control of a Four-Wheel-Steering Vehicle

P. Petrov and M. Parent (France)

Planning Control Commands to Assist in Car Maneuvers

I. Paromtchik (Japan)

Uncertainty and Error Treatment in a Dynamic Localization System

A. Clerentin, L. Delahoche, E. Brassart and C. Drocourt (France)

A Fleet Management System for Cybernetic Transportation

A. Awasthi, S. Benabid, A. Talamona and M. Parent (France)

Onboard Real-time System for Digitizing and Geo-referencing of

3D Urban Environments

I. Abuhadrous, F. Nashashibi, C. Laugeau and F. Goulette (France)

WI-5 (9.05 - 10.45)
Grasping and Hand Design

Artificial Finger with Shape-Fitting Mechanism

K. Koganezawa, J. Umeda and H. Takahashi (Japan)

Polyurethane Gel Pulp for Robotic Fingers

P. Tiezzi, F. Lotti and G. Vassura (Italy)

A Robotic End-Effector for Grasping Sacks

H. Kazerooni and C. Foley (USA)

Force Closure of Fixturing/Grasping with Passive Contacts

Cai-Hua Xiong, M. Yu Wang, Y. Kevin Rong and You-Lun Xiong (China)

Dexterous Multi-fingered Robotic Manipulation using Novel Fingertip

Equipped with Soft Skin and Hard Nail

K. Murakami and T. Hasegawa (Japan)

WI-6 (9.05 - 10.45)**Adaptive Control 1**

Adaptive Robust Force Tracking Impedance Control of Redundant Manipulators Based on Sliding Mode Control

R. Ghaemi, M.N. Ahmadabadi and M.J. Yazdanpanah (Iran)

An Adaptive Predictive Control for Flexible-Link Manipulators

H.A. Talebi and R. Sabzegar (Iran)

Adaptive Control of Parallel Manipulators with Unknown Load

V. Assuncao and W. Schumacher (Germany)

Improvement of a Non-linear Adaptive Controller Designed for Strongly Non-linear Plants

I.J. Rudas, J.K. Tar, J.F. Bitó (Hungary) and K. Kozłowski (Poland)

Adaptive, non-singular Path Following, control of Dynamic Wheeled Robots

D. Soetanto, L. Lapierre and A. Pascoal (Portugal)

Coffee Break (10.45 - 11.05)**WII-1 (11.05 - 12.25)****Biomorphic Robotics**

Biologically Inspired Behavior: Hip Strategy Applied to Humanoid Robot

M. Guihard and P. Gorce (France)

Speech Production Robot based on Human Articulators and Vocal Organs

K. Nishikawa, H. Takanobu, T. Mochida, M. Honda and A. Takanishi (Japan)

Expected Perception in Robots: a Biologically Driven Perception-action Scheme

E. Datteri, G. Teti, C. Laschi, G. Tamburrini, P. Dario and E. Guglielmelli (Italy)

Compliance Control for a Robot with Elastic Joints

L. Zollo, B. Siciliano, A. de Luca, E. Guglielmelli and P. Dario (Italy)

WII-2 (11.05 - 12.25)**Robotic Information Fusion 1**

Sensory Fusion for Planetary Surface Robotic Navigation,

Rendezvous, and Manipulation Operations

T. Huntsberger, Y. Cheng, E. Baumgartner, M. Robinson and P. Schenker (USA)

A Robust Architecture for Decentralised Data Fusion

E. Nettleton, H. Durrant-Whyte and S. Sukkarieh (Australia)

Function Integration for Team Operation of Mobile Robots: Inter-robot

Communication and Mutual Localization

H. Takai, T. Onishi, H. Hara, G. Yasuda and K. Tachibana (Japan)

WII-3 (11.05 - 12.25)**Haptic Interfaces 1**

Manipulation Skills Acquisition through a Haptic Rendered Virtual Environment

Yuxin Chen and F. Naghdy (Australia)

Nonlinear Virtual Coupling Based on a Human Dynamics Model

M. Hwan Lee and D. Yong Lee (Korea)

A Robustness Analysis of Master-Model Based Controller for Stabilizing

Delayed Haptic Interaction: an LMI Approach

H. Arioui, A. Kheddar and S. Mammar (France)

Physiology and Stability Criteria for Human Robot Interaction

F. Popescu (Italy)

WII-4 (11.05 - 12.25)

Robotics Technologies for Intelligent Vehicles 1

Credibilistic Multi-sensor Fusion for Real Time Application. Application

Obstacle Detection and Tracking

D. Gruyer, C. Royere, R. Labayrade and D. Aubert (France)

Tracking of an Omnidirectional Target with a Nonholonomic Mobile Robot

G. Artus, P. Morin and C. Samson (France)

A Motion Estimation System for Autonomous Navigation

J. Kolodko and L. Vlacic (Australia)

Robust Torque Control for Steer-by-Wire Vehicles

N. Bajcinca, M. Haushield (Germany) and R. Cortesão (Portugal)

WII-5 (11.05 - 12.25)

Cooperative Robotics

Minimal Cost Robot Formations

R. Brimble and J. Press (UK)

Extending Constrain-and-Move Strategy to Move Objects on a Desired

Path By a Team of Distributed Robots

A. Zaerpoor, M. Ahmadabadi, M.R. Baruni (Iran) and Z.D. Wang (Japan)

Robot Team Control: A Geometric Approach

J. Sequeira and M.I. Ribeiro (Portugal)

Robot Formations Motion Dynamics Based on Scalar Fields

A. García and P. Lima (Portugal)

WII-6 (11.05 - 12.25)

Adaptive Control 2

Force and Contact Based Control for Human Robot Interaction

M. Frigola, J. Poyatos, A. Casals and J. Amat (Spain)

Modelling and Behavior of Robots Under High Aerodynamic Loads

M. Ahmadi, D. Orchard and F.C. Tang (Canada)

Sliding PID Control for Tracking in Finite Time for Robot Arms

V. Parra-Vega, L. García-Valdovinos, A. Castillo-Tapia and O. Domínguez-Ramírez (Mexico)

A Adaptive Neural Controller for MIMO Systems

Shiuh-Jer Huang and Kuo-Ching Chiou (Taiwan)

Lunch (12.25-13.50)

WIII-1 (13.50-15.10)

Robotics Technologies for Intelligent Vehicles 2

Cooperative Fusion for Multi-obstacles Detection with Use of Stereovision
and Laser Scanner

R. Labayrade, C. Royere, D. Gruyer and D. Aubert (France)

Non Linear Lateral Control of Vision Driven Autonomous Vehicles

M. Sotelo (Spain)

Experimental Issues from Map Building to Trajectory Execution for a Bi-steerable Car

J. Hermosillo, C. Pradalier, S. Sekhavat and C. Laugier (France)

Path-Tracking Controller of a Bi-steerable Cybernetic Car using Fuzzy Logic

L. Conde, U. Nunes, A. Mendes (Portugal) and M. Parent (France)

WIII-2 (13.50-15.10)

Robotic Information Fusion 2

Relative Position Sensing by Fusing Monocular Vision and Inertial Rate Sensors

A. Huster and S. Rock (USA)

Interfaces for Human and Robot Interaction

Antal K. Bejczy (USA)

Fault-Tolerant Certainty Grid

W. Elmenreich (Austria)

WIII-3 (13.50-15.10)

Haptic Interfaces 2

A Robust Haptic Interface Controller using μ -Synthesis

S. Nosrati, H.A. Talebi and F. Towhidkhalah (Iran)

Active Haptic Interface for Remote Training Purposes

O. A. Domínguez-Ramírez and V. Parra-Vega (Mexico)

Pulse Response Evaluation Method for Force Transducers

Y. Fujii (Japan)

WIII-4 (13.50-15.10)

Biologically-Inspired/Humanoid Robotics 3

Stability Analysis of Passive Walking of Biped Emu with Attitude Control of Body

T. Kinugasa (Japan)

A Composite Drive with Separate Control of Force and Position

B. Möhl (Germany)

Connectionist Control Techniques for Humanoid Robots

D. Katic and M. Vukobratovic (Yugoslavia)

A Model for Optimal Path Planning for Self-Reconfigurable Robots

D. Golovin (USA)

WIII-5 (13.50-15.10)

Path Planning and Non-Holonomic Systems

C-space Evaluation using Hierarchical Data Structures

F.J. Blanco, V. Moreno, B. Curto and R. Therón (Spain)

On the Generation of a Trigonometric Interpolating Curve in R³

R.C. Rodrigues, F. Silva Leite and Silvério Rosa (Portugal)

Mobile Manipulators with Implicit Aboard Kinematics

K. Tchon, J. Jakubiak and R. Muszynski (Poland)

Exponential Stabilization of Some Equilibria of Automated Vehicles

A. Abichou (Tunisia), L. Beji and R. Slim (France)

WIII-6 (13.50-15.10)

Fuzzy Control

Optimizing the Design of a Fuzzy Path Planner for Car-like Autonomous Robots

I. Baturone, F.J. Moreno-Velo, S. Sanchez-Solano and A. Ollero (Spain)

Fuzzy Controller for Dynamic Vergence in a Stereo Head

P. Bachiller, F. Monasterio, P. Bustos and J. Vicente (Spain)

Control of Underactuated Manipulators Using Fuzzy Based Switching with NN Compensator

K. Watanabe, L. Udawatta, K. Izumi and K. Kiguchi (Japan)

A Neuro-Fuzzy Control of a Pneumatic Robot for Injection Molding

T. Amaral, O. Contente, M. Crisóstomo and V.F. Pires (Portugal)

Coffee Break (15.10 - 15.30)

WIV-1 (15.30 - 17.10)

Robotics Technologies for Intelligent Vehicles 3

Stereo-Vision Based Real time Obstacle Detection for Urban Environments

Qian Yu (China), H. Araújo (Portugal) and H. Wang (China)

A Roadmap Matching Method for Precise Vehicle Localization using

Belief Theory and Kalman Filtering

M. El Najjar and P. Bonnifait (France)

Rovers for Intelligent, Agile Traverse of Challenging Terrain

P. Schenker, T. Huntsberger, P. Pirjanian, S. Dubowsky, K. Iagnemma and V. Sujan (USA)

Camera-Inertial Sensor Modelling and Alignment for Visual Navigation

J. Alves, J. Lobo and J. Dias (Portugal)

Overtaking Maneuver Experiments with Autonomous Vehicles

J.E. Naranjo, J. Reviejo, C. González, R. García and T. de Pedro (Spain)

WIV-2 (15.30 - 17.10)

Mobile Robots 8

A Hybrid Mapping Approach with a Fuzzy Representation for Mobile Robots

A. Abreu and L. Correia (Portugal)

Traversability Analysis Technics in Outdoor Environments: a Comparative Study

C. Castejón, D. Blanco, B.L. Boada and L. Moreno (Spain)

Integrating Segments and Edges in Feature-based SLAM

D. Rodríguez-Losada and F. Matia (Spain)

Design of an Autonomous Wheeled Mobile Robot

Li Lei, Hou Zeng-guang and Tan Min (China)

Robust Control for Wheeled Mobile Robot

M. Belhocine, M. Hamerlain and F. Meraoubi (Algeria)

WIV-3 (15.30 - 17.10)

Multi-Legged Robots

Design and Control of a Leg for the Running Machine PANTER

K. Berns, F. Grimmering, U. Hochholdinger, T. Kerscher, J. Albiez (Germany)

Position and Force Control of a Walking Hexapod

M.F. Silva and J.A. Tenreiro Machado (Portugal)

Robot Phonotaxis in the Wild: a Biologically Inspired Approach to

Outdoor Sound Localization

A.D. Horchler (USA), R.E. Reeve, B.H. Webb (UK), and R.D. Quinn (USA)

Extending Humanoid Robot Functioning by Proficient Application of

Non-linear Actuators

M. Armada, R. Caballero, T. Akinfiev, H. Montes and L. Pedraza (Spain)

On Conception of Walking Machines Designing

E. Briskin, V. Chernyshev and A. Maloletov (Russia)

WIV-4 (15.30 - 17.10)

Parallel Manipulators

Kinematics of the 3-RSR Wrist

R. Di Gregorio (Italy)

The Optimal Design of a Three Degree-of-Freedom Parallel Mechanism

for Machining Applications

D. Chablat, F. Majo and P. Wenger (France)

Calibration Method by Simplified Measurement for Parallel Mechanism

W. Tanaka, T. Arai, K. Inoue, Y. Mae, C. Sik Park and Y. Koseki (Japan)

Stiffness Study on a 6-DOF Parallel Wire Driven Robot

Chunping Sui, Bo Zhang, Yanli Qu and Mingyang Zhao (China)

Dynamic Behavior of Truss-Type Parallel Mechanism with Actuated Wire Members

K. Hanahara and Y. Tada (Japan)

WIV-5 (15.30 - 17.10)

Applications and Task Planning

An Intelligent Sensor Head for Information Collection in Debris

S. Tadokoro, T. Kishima, S. Makita, Y. Williams and S. Julien (Japan)

Shape Modeling in Robot Systems Using Extended Application of Form Features

L. Horváth, I.J. Rudas, J. Bitó, and J.K. Tar (Hungary)

Effectiveness and Application of Simplified Geometric Models in

Skill-Based Manipulation

A. Nakamura, K. Kitagaki and T. Suehiro (Japan)

Distributed Overhead Hybrid Pins for Part Orienting: an Exploratory Study

H.F. Noriega, K. Gupta, S. Payandeh (Canada)

Linear Programming-Based Qualitative Evaluation for Micro-Assembly Planning

S. Addouche, C. Perrard, J. Henrioud (France)

WIV-6 (15.30 - 17.10)

Kinematics 2

On Kinematic Geometry for Multi-Agent Contacting System

S. Payandeh (Canada)

A Unified Approach to Differential Kinematics of Nonredundant Manipulators

A. Campos, D. Martins and R. Guenther (Brazil)

Powered Condition Number: a Unified Index for Optimal Pose Selection in

Manipulator Kinematic Calibration

M. Khaleghian and M. Ahmadabadi (Iran)

Classification of one Family of 3R Positioning Manipulators

M. Baili, P. Wenger, D. Chablat (France)

Memory Neural Network for Kinematic Inversion of Constrained Redundant

Robot Manipulators

D. Boubaker, T. Madani, A. Ramdane-cherif and A. Benallegue (France)

Technical Break (17.10 - 17.15)

Plenary Lecture 4 (17.15 - 18.15)

CyberCars: the Future of Road Transport?

Michel Parent (INRIA Rocquencourt, France)

Closing Session

Exhibition & Demos (18.15 - 19.30)

Gala Dinner (20.00)

Thursday 03 - July - 2003

Post-conference Tour: Full-day tour to Alcobaça, Óbidos, Nazaré and Batalha (09:00 - 19:00)

Exhibitions & Demos (10.00 - 17.00)

Social Program for Accompanying Persons

Full-day tour to Coimbra (July 1, 9.00 - 17.30)

Full-day tour to Conimbriga, Bussaco, Wine Caves and Luso (thermal Springs) (July 2, 9.00 - 18.00)