ROBOT2017:
ROBOT'2017 - THIRD IBERIAN ROBOTICS CONFERENCE

PROGRAM INDEXES

PROGRAM

Days: Wednesday, November 22nd
Thursday, November 23rd   Friday, November 24th

Wednesday, November 22nd

View this program:  with abstracts  session overview  talk overview

14:45-15:00   Session W: Welcome

LOCATION:  Salón de actos

15:00-16:00   Session Plenary I: Ocean One: A Robotic Avatar for Oceanic Discovery.

Author: Oussama Khatib (Stanford University)

LOCATION:  Salón de actos

16:00-17:30   Session WA1-R1: General track: Mobile robotics

CHAIRS:  Jose Lima and António Paulo Moreira

LOCATION:  R1 - Sala Juan Larrañeta

16:00  Francisco Ferreira, Héber Sobreira, Germano Veiga and António Moreira
      Landmark detection for docking tasks (abstract)

16:15  Goran Popović, Juraj Oršulić, Damjan Miklić and Stjepan Bogdan
      Rao-Blackwellized particle filter SLAM with prior map: An experimental evaluation (abstract)

16:30  Pedro Relvas, Paulo Costa and António Moreira
      Object Tracking in a Moving Reference Frame (abstract)

16:45  Emilio García-Fidalgo, Alberto Ortiz and Miquel Massot Campos
      Vision-based Control for an AUV in a Multi-Robot Undersea Intervention Task (abstract)

17:00  Ana Rodrigues, Pedro Costa and Jose Lima
      The K-Frame Quadtree's approach for path planning through a known environment (abstract)

17:15  Marina B. A. Souza, Edimar J. Oliveira and Leonardo W. Oliveira
      Collision avoidance for Multi-robot Systems with Coincident Paths based on Fictitious Collision Points using Nonlinear Formulation (abstract)

16:00-17:30   Session WA1-R2: New particular developments in marine robotics

CHAIRS:  A. Pedro Aguiar and Fernando Lobo Pereira
LOCATION: R2 - Salón de grados

16:00 Juan Braga, A. Pedro Aguiar and João Borges de Sousa
Coordinated Multi-UAV Exploration Strategy for Large Areas with Communication Constrains (abstract)

16:15 R Praveen Kumar Jain, Andrea Alessandretti, A. Pedro Aguiar and Joao Sousa
A Nonlinear Model Predictive Control for an AUV to Track and Estimate a Moving Target using Range Measurements (abstract)

16:30 Leopoldo Rodriguez, Jose A. Cobano and Aníbal Ollero
Architecture of a Flight Endurance Enhancement System for Maritime Operations with Fixed Wing UAS (abstract)

16:45 Josep Bosch, Klemen Istenič, David Ribas, Pere Ridao, Nuno Gracias, Rafael Garcia and Irena Radic
Immersive Touring For Marine Archaeologywith an AUV. An application of a new compact omnidirectional camera to mapping the Gnalić shipwreck. (abstract)

17:00 Satia Sivcev, Edin Omerdic, Gerard Dooly, Joseph Coleman and Daniel Toal
Towards Inspection of Marine Energy Devices using ROVs: Floating Wind Turbine Motion Replication (abstract)

17:15 Cesar Martinez and Eduardo de Diego
SHORT INDUSTRIAL PAPER: High reliability unmanned vessels (abstract)

16:00-17:30 Session WA1-R3: Cooperative and active perception for robotics

CHAIRS: Jesus Capitan and Luis Merino
LOCATION: R3 - Sala de juntas

16:00 Tiago Pereira, António Moreira and Manuela Veloso
Multi-Robot Planning for Perception of Multiple Regions of Interest (abstract)

16:15 Iván Del Pino, Víctor Vaquero, Beatrice Masini, Joan Solà, Francesc Moreno-Noquer, Alberto Sanfeliu and Juan Andrade-Cetto
Low resolution lidar-based multi object tracking for driving applications (abstract)

16:30 Eduardo Ferrera, Jesus Capitan and Pedro Jose Marron
From Fast to Accurate Wireless Map Reconstruction for Human Positioning Systems (abstract)

16:45 Kruno Lenac, Josp Ćesić, Ivan Marković and Ivan Petrović
Cooperative Cloud SLAM on Matrix Lie Groups (abstract)

17:00 Eman Hasan, Khaled Alwahedi, Jorge Dias and Belal Juma
Circle Formation in Multi-Robot Systems with Limited Visibility (abstract)

17:15
Arturo Torres-Gonzalez, Jesus Capitan, Rita Cunha and Anibal Ollero
A Multidrone Approach for Autonomous Cinematography Planning (abstract)

16:00-17:30 Session WA1-R4: Ontologies and knowledge representation for robotics

CHAIRS: Julita Bermejo-Alonso and Paulo Goncalves
LOCATION: R4 - Aula 008

16:00 John Bateman, Michael Beetz, Daniel Bessler, Asil Kaa In Bozcuoglu and Mihai Pomarian
Heterogeneous ontologies and hybrid reasoning for service robotics: the EASE framework (abstract)

16:15 Julita Bermejo-Alonso and Ricardo Sanz
Towards an Ontology for Task and Planning in Autonomous Systems: an Emergency Scenario (abstract)

16:30 Rodrigo Bernardo, Rodolfo Farinha and Paulo Goncalves
Knowledge and Tasks Representation for an Industrial Robotic Application (abstract)

16:45 Mohammed Diab, Muhayy Ud Din, Aliakbar Akbari and Jan Rosell
Physics-based Ontology for Manipulation Planning (abstract)

17:00 Francisco Ramos, Alberto Olivares-Alarcos, Andrés Salomón Vázquez and Raúl Fernández
What Can Ontologies Do for Robot Design? (abstract)

17:15 Jakob Suchan and Mehul Bhatt
Deep Semantic Abstractions of Everyday Human Activities: On Commonsense Representations of Human-Object Interactions (abstract)

16:00-17:30 Session WA1-R5: Vision and Learning for robotics (I)

CHAIRS: Eugenio Aguirre Molina and Miguel Cazorla
LOCATION: R5 - Aula 009

16:00 Fernando E. Casado, Carlos V. Requeiro, Roberto Iglesias, Xose M. Pardo and Eric Lopez
Automatic selection of user samples for a non-collaborative face verification system (abstract)

16:15 Edmanuel Cruz, José Carlos Rangel and Miguel Cazorla
Robot Semantic Localization through CNN Descriptors (abstract)

16:30 Félix Escalona, Francisco Gomez-Donoso and Miguel Cazorla
3D object mapping using a labelling system (abstract)

16:45 Francisco Gomez-Donoso, Sergio Orts-Escolano and Miguel Cazorla
Robust Hand Pose Regression Using Convolutional Neural Networks (abstract)

17:00 Cristina Romero-González, Jesus Martinez-Gomez and Ismael García-Varea
3D semantic maps for scene segmentation (abstract)

17:15 John Alejandro Castro, Alberto García-García, Sergiu Oprea, Sergio Orts-Escolano and Jose García-Rodríguez
Detecting and manipulating objects with a social robot: an ambient assisted living approach (abstract)

17:30-18:00 Coffee Break

18:00-19:30 Session WA2-R1: General track: Mobile Robotics Applications

CHAIRS: Ana C. Murillo and José Luis Villarroel
LOCATION: R1 - Sala Juan Larrañeta

18:00 Paula Abad, Miguel Franco, Rosa Castillón, Iñigo Alonso, Ana B. Cambrá, Jorge Sierra, Luis Riazaio, Luis Montano and Ana C. Murillo
Integrating an autonomous robot on a dance and new technologies festival (abstract)

18:15 Gary Cornelius, Patrice Caire, Nico Hochgeschwender, Holger Voos, Miquel À. Olivares-Mendez, Marcus Völp and Paulo Esteves-Verissimo
A Perspective of Security for Mobile Service Robots (abstract)

18:30 Rilene Carolina Goelzer, Letieri Avila and Vinicius Menezes de Oliveira
Project and Trajectory Control of an Autonomous Aerator for Aquaculture (abstract)

18:45 Ely Repiso, Anais Garrell and Alberto Sanfeliu
On-line adaptive side-by-side human robot companion to approach a moving person to interact (abstract)

19:00 Danilo Tardioli, Luis Riazaio, Teresa Seco, Jesús Espelosín, Jorge Lalana, Jose Luis Villarroel and Luis Montano
A robotized dumper for debris removal intunnels under construction (abstract)

19:15 Dominik B. O. Bös and Martina Bode
Roboethics and Robotic Governance – a Literature Review and Research Agenda (abstract)

18:00-19:30 Session WA2-R2: Agricultural robotics and field automation

CHAIRS: Raul Morais Santos and Filipe Neves Dos Santos
LOCATION: R2 - Salón de grados

18:00 Teresa Conceição, Filipe Neves Dos Santos, António P. Moreira and Paulo Costa
Robot Localization System in a Hard Outdoor Environment (abstract)

18:15 Sedat Dogru and Lino Marques
Improving Dead-Reckoning Performance of Skid-Steered Wheeled Robots Using an Improved Kinematic Model (abstract)

18:30 Sedat Dogru and Lino Marques
A*-Based Solution to the Coverage Path Planning Problem (abstract)
18:45 Ferran Roure, Germán Moreno, Marcel Soler, Davide Facconti, Daniel Serrano, Piero Astolfi, Gianluca Bardaro, Alessandro Gabrielli, Luca Bascetta and Matteo Matteucci
GRAPE: Ground Robot for vineYard
Monitoring and ProteCtion (abstract)

19:00 Luis Santos, Filipe Santos, Jorge Mendes, Nuno André Ferraz, José Lima, Raul Morais and Pedro Costa
Automatic recharging system for steep-slope vineyard robots (abstract)

18:00-19:30 Session WA2-R3: WAF: Robots for healthcare

CHAIRS: Raquel Fuentetaja and Angel Garcia Olaya
LOCATION: R3 - Sala de juntas

18:00 Anthony Remazeilles, Miguel Prada and Iraí Rasines
Appropriate Spherical Coordinate Model for Trocar Port Constraint in Robotic Surgery (abstract)

18:15 Francisco Martín Rico and Jonathan Ginés Clavero
Practical aspects of deploying Robotherapy systems (abstract)

18:30 Enrique García Estévez, Irene Díaz Portales, José Carlos Pulido, Raquel Fuentetaja and Fernando Fernández
Enhancing a Robotic Rehabilitation Model for Hand-Arm Bimanual Intensive Therapy (abstract)

LifeBots I: Building the Software Infrastructure for Supporting Lifelong Technologies (abstract)

19:00 Dimitri Volmy, Cristina Suarez, Adrian Romero-Garcés, Cristian Reuther, Jose Carlos Pulido, Rebeca Marfil, Luis J Manso, Karine Lan Hing Ting, Ana Iglesias, Jose Carlos Gonzalez, Javier Garcia, Angel Garcia-Olaya, Raquel Fuentetaja, Fernando Fernandez, Alvaro Dueñas, Luis Vicente Callejera, Pablo Bustos, T Barile, Juan Pedro Bandera Rubio and Antonio Bandera
CLARC: A Cognitive Robot for Helping Geriatric Doctors in Real Scenarios (abstract)

19:15 Juan-Carlos Cobos-Torres, Adrián Rodríguez Sánchez, Jordan Ortega Rodríguez, Pablo J. Alhama Blanco and Mohamed Abderrahim
Desarrollo de un sistema robótico de triaje rápido para situaciones de catástrofe (abstract)

18:00-19:30 Session WA2-R4: Simulation in robotics

CHAIRS: Artur Pereira and Luis Paulo Reis
LOCATION: R4 - Aula 008
18:00 **Enrique Mancha, José Emilio Traver, Ines Tejado, Blas M. Vinagre and Vicente Feliu**
Artificial Flagellum Microrobot. Design and Simulation in COMSOL (abstract)

18:15 **Muhayv Ud Din, Aliakbar Akbari and Jan Rosell**
Knowledge-oriented Physics-based Motion Planning for Grasping in the Presence of Uncertainty (abstract)

18:30 **Adrián Peidró Vidal, Oscar Reinoso, José María Marin, Arturo Gil, Luis Paya and Yerai Berenguer**
A Simulation Tool for Visualizing the Assembly Modes and Singularity Locus of 3RPR Planar Parallel Robots (abstract)

18:45 **Félix Orjales, Fernando Lopez Peña, Alejandro Paz-Lopez, Alvaro Deibe and Richard Duro**
On the use of mixed reality for setting up controls and coordination strategies for teams of autonomous UAV (abstract)

19:00 **Pedro Tavares, João André Silva, Pedro Costa, Germán Osorio and António Paulo Moreira**
Flexible Work Cell Simulator using Digital Twin Methodology for Highly Complex Systems in Industry 4.0 (abstract)

18:00-19:30 Session WA2-R5: Vision and learning for robotics (II)

**CHAIRS:** **Eugenio Aguirre Molina** and **Miguel Cazorla**

**LOCATION:** R5 - Aula 009

18:00 **Eugenio Aguirre, Miguel García-Silvente and Marcelo García-Perez**
Learning leg pattern using laser lange finder in mobile robots (abstract)

18:15 **Yerai Berenguer, Luis Paya, Oscar Reinoso, Adrián Peidró Vidal and Luis Miguel Jiménez**
Movement Direction Estimation using Omnidirectional Images in a SLAM algorithm (abstract)

18:30 **Ana B. Cambra, Adolfo Muñoz and Ana C. Murillo**
How to transfer an autonomous driving model for semantic segmentation to other domains? (abstract)

18:45 **Jacobo Lopez-Fernandez, Roberto Iglesias, Carlos V. Regueiro and Fernando E. Casado**
Inertial navigation with mobile devices: A robust step count model (abstract)

19:00 **Manuel Zafra** and **Josemaría Cañas**
Fine 3D path following of a quadcopter (abstract)

Thursday, November 23rd

View this program: with abstracts  session overview talk overview

09:00-10:00 Session Plenary II: Soft Robotic Technologies for Safe, Robust, Smart Drones.

Author: Dario Floreano (Laboratory of Intelligent Systems - EPFL)
LOCATION: Salón de actos
10:00-10:30 Coffee Break
10:30-12:00 Session TM1-R1: Aerial robotics for inspection
CHAIRS: Guillermo Heredia and Alberto Ortiz
LOCATION: R1 - Sala Juan Larrañeta
10:30 Francisco Bonnin-Pascual and Alberto Ortiz
Testing the Control Architecture of a Micro-Aerial Vehicle for Visual Inspection of Vessels (abstract)
10:45 Luis Evaristo Caraballo de La Cruz, Sergey Bereg and José-Miguel Díaz-Báñez
Efficient inspection of underground galleries using k robots with limited energy (abstract)
11:00 Alexandre Gomes, Bruno J. N. Guerreiro, Rita Cunha, Carlos Silvestre and Paulo Oliveira
Sensor-based 3-D Pose Estimation and Control of Rotary-wing UAVs using a 2-D LiDAR (abstract)
11:15 Pedro Grau, Alejandro Suarez, Angel Rodriguez-Castano and Anibal Ollero
Design of a High Performance Dual Arm Aerial Manipulator (abstract)
11:30 P. J. Sanchez-Cuevas, Guillermo Heredia and Anibal Ollero
Experimental approach to the aerodynamic effects produced in multirotors flying close to obstacles. (abstract)
11:45 Francisco Alarcon, Francisco Javier Mateos, Jorge Juan Muñoz, Antidio Viguria, Javier Lara and Antonio Ramirez
PANDORA (abstract)
10:30-12:00 Session TM1-R2: Industrial track: Integration of drones in low altitude aerial space
CHAIRS: Daniel Montero and Antidio Viguria
LOCATION: R2 - Salón de grados
10:30 Francisco Javier Barcala and Antidio Viguria
TARGUS, the evolution of a manned aircraft to an Optional Piloted Vehicle (OPV) for public services (abstract)
10:45 Eduardo Cruz Velasco and Daniel Montero
Main challenges of RPAS in VLL operations (abstract)
11:00 Antidio Viguria
Intelligent navigation systems. Application of automation technologies in VLL operations (abstract)
11:15 Jorge Bueno and Andrés Arranz
RPAS operations at very low level in a 4G/5G environment (abstract)
10:30-12:00 Session TM1-R3: Robotic Business Opportunities supported by RoboTT-Net – some robotic companies’ initiatives
- Welcome and Introduction of RoboTT-Net (10 min)
• Presentation of business opportunities in Robotics in the framework of RoboTT-Net (5-6 initiatives, mainly from Spain and Portugal, selected between the 64 initiatives funded by RoboTT-Net (60 min)
• Conclusions (20 min)

CHAIR: Jon Aguirre Ibargar
LOCATION: R3 - Sala de juntas
10:30-12:00 Session TM1-R4: Machine learning in robotics
CHAIRS: Brigida Monica Faria and Luis Merino
LOCATION: R4 - Aula 008
10:30 Ana Almeida, Rui Figueiredo, Alexandre Bernardino and José Santos-Victor
Deep Networks for Human Visual Attention: A hybrid model using foveal vision (abstract)
10:45 David Simoes, Nuno Lau and Luis Paulo Reis
Mixed-Policy Asynchronous Deep Q-Learning (abstract)
11:00 Adrià Colomé, Sergi Foix, Guillem Alenyà and Carme Torras
Reward-weighted GMM and its application to action-selection in robotized shoe dressing (abstract)
11:15 Carlos M. Costa, Germano Veiga and Armando Sousa
Pose Invariant Object Recognition Using a Bag of Words Approach (abstract)
11:30 Juan M. Gandarias, Jesús M. Gómez-De-Gabriel and Alfonso García-Cerezo
Tactile Sensing and Machine Learning for Human and Object Recognition in Disaster Scenarios (abstract)
10:30-12:00 Session TM1-R5: Visual perception for robotics
CHAIRS: Begoña Arrue and Jan Škoda
LOCATION: R5 - Aula 009
10:30 Javier Prada Delgado, Pablo Ramon Soria, B. C. Arrue and A. Ollero
Bridge mapping for inspection using an UAV assisted by a total station (abstract)
10:45 Pablo Ramon Soria, Fouad Sukkar, Wolfram Martens, B. C. Arrue and Robert Fitch
Multi-View Probabilistic Segmentation of Pome Fruit with a Low-Cost RGB-D Camera (abstract)
11:00 Alejandro Suarez, Guillermo Heredia and Anibal Ollero
Vision-based Deflection Estimation in an Anthropomorphic, Compliant and Lightweight Dual Arm (abstract)
11:15 Jan Škoda and Roman Barták
3D Navigation for a Mobile Robot (abstract)
11:30 Daniel Cores and Manuel Mucientes
Reconstrucción 3D densa de escenas utilizando una cámara monocular (abstract)
12:00-13:00    Session TM2-R1: General track: Aerial Robotics I
CHAIRS:       Fernando Lobo Pereira and Angel Rodriguez-Castano
LOCATION:     R1 - Sala Juan Larrañeta

12:00         Katariina Borovina and John Hallam
Simulation Environment for the Evaluation
and Design of Reactive Obstacle Avoidance
Algorithms in UAS Operating in Low Altitude
Airspace (abstract)

12:15         Alojz Gomola, João Borges de Sousa, Fernando
Lobo Pereira and Pavel Klang
Obstacle Avoidance Framework Based on
Reach Sets (abstract)

12:30         Francisco Real, Angel Rodriguez-Castaño and
Jesus Capitan
A Montecarlo Reactive Navigation Algorithm
for a Dual Arm Aerial Robot (abstract)

12:45         Rômulo T. Rodrigues, Meysam Basiri, A. Pedro
Aguiar and Pedro Miraldo
Feature Based Potential Field for Low-level
Active Visual Navigation (abstract)

12:00-13:00    Session TM2-R2: Industrial track: Robotic
solutions for flexible manufacturing
CHAIRS:       Jon Agirre Ibarbia and Raúl Suarez
LOCATION:     R2 - Salón de grados

12:00         David Culla, Jean Baptiste Izard, Mariola
Rodriguez, Pierre Elliot Hervé, Jose Gorrotxategi
and Jesús Cañada
Full production plant automation in industry
using cable robotics with high load capacities
and position accuracy (abstract)

12:15         Gi Hyun Lim, Eurico Pedrosa, Filipe Amaral,
Ricardo Dias, Artur Pereira, Nuno Lau, Jose
Azevedo and Bernardo Cunha
Human-Robot Collaboration and Safety
Management for Logistics and Manipulation
Tasks (abstract)

12:30         Fernando Soler, Abiud Rojas de Silva and Raúl
Suárez
Grasp Quality Measures for Transferring
Objects (abstract)

12:45         Damien Sallé, Héctor Herrera, Mildred Puerto,
María Del Mar Otero and Enrique Gil
Implementing mechatronic objects for
versatile assembly lines: Aeronautical use
cases (abstract)

12:00-13:00    Session TM2-R4: Robots cooperating with
sensor networks
CHAIRS:       Jesus Fernandez-Lozano and Jose Ramiro Martinez de
Dios
LOCATION:     R4 - Aula 008

12:00         Julio L. Paneque, Arturo Torres-González, J.
Ramiro Martinez-De Dios and Aníbal Ollero
Autonomous Localization of Missing Items
with Aerial Robots in an Aircraft Factory (abstract)
abstract )
12:15 J. Jesus Fernandez-Lozano, Jose Antonio Gomez-Ruiz, Miguel Martin Guzman, Juan Martin-Avila, Carlos Socarras Bertiz and Alfonso Garcia-Cerezo
Wireless sensor networks for urban information systems: preliminary results of integration of an electric vehicle as a mobile node ( abstract )
12:30 Francisco J. Fernandez-Jimenez and J. Ramiro Martinez-De Dios
12:45 Rui Gomes and Fernando Lobo Pereira
A Robust Reach Set MPC Scheme For Formation Control of AUVs ( abstract )
12:00-13:00 Session TM2-R5: Educational robotics
CHAIRS: Manuel Silva and Armando Sousa
LOCATION: R5 - Aula 009
12:00 Francisco Bellas, Martin Naya, Gervasio Varela, Luis Llamas, Moises Bautista, Abraham Prieto and Richard Duro
Robobo: The Next Generation of Educational Robot ( abstract )
12:15 Alexander Ferrein, Stefan Schiffer and Stephan Kallweit
The ROSIN Education Concept: Fostering ROS Industrial-related robotics education in Europe ( abstract )
12:30 Pedro Fonseca, Paulo Pedreiras and Filipe Silva
Mobile Robots as a Tool to Teach First Year Engineering Electronics ( abstract )
12:45 Paola Ferrarelli, Tamara Lapucci and Luca Iocchi
Methodology and results on teaching Maths using mobile robots ( abstract )
13:00-14:00 Lunch Break
14:00-15:00 Session TA1-R1: General track: Aerial Robotics II
CHAIRS: Jose Angel Acosta and Miguel A. Olivares-Mendez
LOCATION: R1 - Sala Juan Larrañeta
14:00 Abdulla Al-Kaff, Juan Camilo Soto Triviño, Raúl Sosa San Frutos, Arturo de la Escalera and José Maria Amingol Moreno
Aerial Image Mosaicking for Multi-purpose Civil Applications ( abstract )
14:15 Carlos R. de Cos, José Ángel Acosta and Anibal Ollero
Command-filtered Backstepping redesign for Aerial Manipulators under aerodynamic and operational disturbances ( abstract )
14:30 Manuel Castillo-Lopez, Miguel A. Olivares-Mendez and Holger Voos
Evasive Maneuvering for UAVs: An MPC Approach ( abstract )
14:45
Wojciech Giemacki, Tadeo Espinoza Fraire and Piotr Koziarski
Cuttlefish Optimization Algorithm in Auto Tuning of Altitude Controller of Unmanned Aerial Vehicle (UAV) (abstract)

14:00-15:00 Session TA1-R2: Industrial track: Application of robotics to manufacturing processes in the aeronautic industry

CHAIRS: Raúl Cano and Ricardo Marin
LOCATION: R2 - Salón de grados

14:00 José R. de Los Santos, Raúl Cano, Daniel Martínez, Víctor Sánchez, Aníbal Ollero, Ignacio Bermejo and Gracia Ramos
Sistema Robotizado para la Aplicación de Sellante sobre Perfiles de Piezas Aeronáuticas Recanteadas de Material Compuesto (abstract)

14:15 Paloma Vega, Raúl Cano, José R. De Los Santos, Ricardo Marín, Alfonso Bello, Víctor Sánchez, Elena Blanco, Joaquín Rodríguez, Daniel Martínez, José Mª Barrientos and Aníbal Ollero
La Robotización de los Procesos de Fabricación Aeronáutica en la Industria 4.0 (abstract)

14:30 José R. De Los Santos, Ricardo Marín, Raúl Cano, Aníbal Ollero, Iñigo Rojas, Óscar Ibáñez de Garayo and Miquel Á. Castilo
Sistema Robótico Flexible y de bajo Coste para el Taladrado de Revestimientos en el Sector Aeronáutico (abstract)

14:45 Daniel Martínez, Elena Blanco, Raúl Cano, Aníbal Ollero, Alejandro González and Remedios Segado
Sistema Automatizado para el Pintado y Detección de Defectos en Piezas Aeronáuticas Complejas (abstract)

14:00-15:00 Session TA1-R4: Sensor technologies oriented to computer vision applications

CHAIRS: Carlos Cerrada and P. Javier Herrera
LOCATION: R4 - Aula 008

14:00 Antonio Adan Oliver, David de La Rubia and Andrés Salomón Vázquez
Obtaining and Monitoring Warehouse 3D Models with Laser Scanner Data (abstract)

14:15 José M. Bengoechea-Guevara, Andujar Dionisio, Francisco L. Sanchez-Sardana, Karla Cantuña and Angela Ribeiro
3D monitoring of woody crops using a medium-sized field inspection vehicle (abstract)

14:30 Jaime Duque-Domingo, P. Javier Herrera, Carlos Cerrada and José A. Cerrada
A vision-based strategy to segment and localize ancient symbols written in stone (abstract)

14:00-15:00 Session TA1-R5: Autonomous driving and driver assistance systems (l)
CHAIRS: Arturo de La Escalera and Paulo Oliveira
LOCATION: R5 - Aula 009

14:00 Andre Antunes, Carlos Cardeira and Paulo Oliveira
Application of Sideslip Estimation Architecture to a Formula Student Prototype (abstract)

14:15 João Antunes, Carlos Cardeira and Paulo Oliveira
Torque Vectoring for a Formula Student Prototype (abstract)

14:30 Jordi Perez Talamino and Alberto Sanfeliu
Path and velocity trajectory selection in an anticipative kinodynamic motion planner for autonomous driving (abstract)

14:45 Seyed Amin Sajadi-Alamdari, Holger Voos and Mohamed Darouach
Deadzone-Quadratic Penalty Function for Predictive Extended Cruise Control with Experimental Validation (abstract)

15:00-16:00 Session TA2-R1: Robotic and unmanned vehicles for security
CHAIRS: Jesus Fernandez-Lozano and Alfonso García-Cerezo
LOCATION: R1 - Sala Juan Larrañeta

15:00 Kala Garapati, Juan Jesús Roldán, Jaime Del Cerro and Antonio Barrientos
A game of drones: game theoretic approaches for multi-robot task allocation in security missions (abstract)

15:15 David Alfredo Garzon Ramos, Mario Andrei Garzon Oviedo, Jorge De León Rivas and Antonio Barrientos
Enhancing RRT planning for interception with distance and probability maps based on FMM (abstract)

15:30 José Lima and Paulo Costa
Ultra-wideband Time of Flight Based Localization System and Odometry Fusion for a Scanning 3 DoF Magnetic Field Autonomous Robot (abstract)

15:45 Santiago Garrido, Luis Moreno, Fernando Martin and David Álvarez
Quality study of robot trajectories based on the Anisotropic Fast Marching Method (abstract)

15:00-16:00 Session TA2-R2: Industrial track: Application for robotics in shipbuilding
CHAIRS: Pedro L. Galindo and Arturo Morgado Estévez
LOCATION: R2 - Salón de grados

15:00 Pedro L. Galindo, Arturo Morgado-Estevez, José Luis Aparicio, Guillermo Bárcena, José Andrés Soto, Francisco Abad and Pedro Chavera
Development of a customized interface for a robotic welding application at Navantia shipbuilding company (abstract)

15:15 Arturo Morgado-Estevez, Pedro L. Galindo, Jose-Luis Aparicio-Rodriguez, Ignacio Díaz-Cano,
Carlos Rioja-Del-Rio, Jose A. Soto-Nuñez, Pedro Chavera and Francisco J. Abad-Fraga
Towards automated welding in big shipbuilding assisted by programed robotic arm using a measuring arm (abstract)

15:30 Daniel Moreno Nieto, Víctor Casal, Elena Corrales-Estático, Francisco J. Abad Fraga and Sergio I. Molina
Big format 3D printing for shipbuilding (abstract)

15:45 José Antonio Patiño, Rafael Morgade, Carlos Yañez, Manuel Villadóniga, José Ramón Franco and Daniel Gesto
Advanced Manufacturing of Nodes for Wind Offshore Jacket Structures (abstract)

15:00-16:00 Session TA2-R3: WAF: Cognitive architectures
CHAIRS: Vicente Matellán and Domenec Puig
LOCATION: R3 - Sala de juntas

15:00 Jesús Balsa-Comerón, Ángel Manuel Guerrero-Higueras, Francisco Javier Rodríguez-Lera, Camino Fernández-Llamas and Vicente Matellán
Cybersecurity in autonomous systems: hardening ROS using encrypted communications and semantic rules (abstract)

15:15 Pablo Bernal and Humberto Martinez Barbera
Triaxial Sensor Calibration: a Prototype for Accelerometer and Gyroscope Calibration (abstract)

15:30 Julián Cristiano, Domenec Puig and Miguel Angel Garcia
Automatic Characterization of Phase Resetting Controllers for Quick Balance Recovery during Biped Locomotion (abstract)

15:45 Francisco Rodríguez-Sedano, Pere Ponsa, Pablo Blanco-Medina and Luis Miguel Muñoz
Interface Design of Haptic Feedback on Teleoperated System (abstract)

15:00-16:00 Session TA2-R4: Robot competitions
CHAIRS: José Joaquin Acevedo and Francisco J Rodriguez Lera
LOCATION: R4 - Aula 008

15:00 Alan Winfield, Marta Palau, Bernd Brüggenmann, Ayoze Castro, Gabrielle Ferri, Fausto Ferreira, Xingkun Liu, Yvan Petillot, Juha Roning, Frank Schneider, Erik Stengler, Dario Sosa and Antídio Viguria

15:15 José Joaquin Acevedo, Manuel Garcia, Antídio Viguria, Pablo Ramon Soria, Begoña Arnue and Aníbal Oller
Autonomous landing of a multicopter on a moving platform based on vision techniques (abstract)
15:30 Jonathan Ginés Clvero, Francisco Martín Rico, Vicente Matellan, Jesus Balsa and Francisco Lera
3D mapping for a reliable long-term navigation (abstract)

15:45 Maria T. Lázaro, Giorgio Grisetti, Luca Iocchi, Jaime Pulido Fuentes and Marc Hanheide
A lightweight navigation system for mobile robots (abstract)

15:00-16:00 Session TA2-R5: Autonomous driving and driver assistance systems (II)
CHAIRS: Arturo de La Escalera and Paulo Oliveira
LOCATION: R5 - Aula 009
15:00 Ana Rita Silva Gaspar, Alexandra Pereira Nunes, Andry Pinto and Anibal Matos
Comparative study of visual odometry and SLAM techniques (abstract)

15:15 Alireza Asvadi, Luis Garrote, Cristiano Premebida, Paulo Peixoto and Urbano Nunes
Real-Time Deep ConvNet-based Vehicle Detection Using 3D-LIDAR Reflection Intensity Data (abstract)

15:30 Carlos Guindel Gómez, David Martín Gómez and José Maria Armingol Moreno
Modeling Traffic Scenes for Intelligent Vehicles using CNN-based Detection and Orientation Estimation (abstract)

15:45 Pablo Marín Plaza, Ahmed Hussein, David Martín Gómez and Arturo De La Escalera
Complete ROS-based Architecture for Intelligent Vehicles (abstract)

16:00-16:20 Coffee Break

16:20-18:20 Session RT: Round Table: Success cases in Robotic Innovations (Organized by CDTI)
- Enrique Pelayo (CDTI) - H2020 Projects
- Carlos Toledo (CDTI) - Spanish funding
- Success cases

LOCATION: Salón de actos

18:20-19:20 Session SA: SEIDROB Assembly
LOCATION: Salón de actos
21:00-23:30 Session : Dinner

Friday, November 24th

View this program: with abstracts session overview talk overview

09:00-10:00 Session Plenary III: Human-Robot Cooperation with Torque-Controlled Light-Weight Robots in the Context of Future Manufacturing and Personal Assistance.

Author: Alin Albu-Schäffer (DLR-German Aerospace Center)

LOCATION: Salón de actos
10:00-10:30  Session A: Awards
LOCATION:  Salón de actos
10:30-11:00  Coffee Break
11:00-12:00  Session FM1-R1: Challenges in medical robotics in the frame of Industry 4.0
CHAIRS:  Josep Amat and Alicia Casals
LOCATION:  R1 - Sala Juan Larrañeta
11:00 Carlos Soler  
Health 4.0 oriented to non-surgical treatment (abstract)
11:15 Álvaro Bertelsen, Davide Scorza, Camilo Cortés, Jon Oñativia, Álvaro Escudero, Emilio Sánchez and Jorge Presa  
Collaborative Robots for Surgical Applications (abstract)
11:30 Alicia Casals, Narcís Sáyols and Josep Amat  
New Technologies in Surgery (abstract)
11:45 Carmen López-Casado, Enrique Bauzano, Irene Rivas-Blanco, Víctor F. Muñoz and Juan C. Fraile  
Collaborative robotic system for hand-assisted laparoscopic surgery (abstract)
11:00-12:00  Session FM1-R2: Robotics and cyber-physical systems for Industry 4.0 (I)
CHAIRS:  Jose Lima and Germano Veiga
LOCATION:  R2 - Salón de grados
11:00 Ricardo Silva, Luis F. Rocha, Pedro Costa and Manuel Silva  
Off-line Programming of Collision Free Trajectories for Palletizing Robots (abstract)
11:15 Mohammad Safeea, Richard Bearee and Pedro Neto  
End-effector precise hand-guiding for collaborative robots (abstract)
11:30 Francisco Navarro, Javier Fdez, Mario Andrei Garzon Oviedo, Juan Jesús Roldán and Antonio Barrientos  
Integrating 3D reconstruction and virtual reality: a new approach for immersive teleoperation (abstract)
11:45 César Toscano, Rafael Arrais and Germano Veiga  
Enhancement of Industrial Logistic Systems with Semantic 3D Representations for Mobile Manipulators (abstract)
11:00-12:00  Session FM1-R4: General track: Manipulation
CHAIRS:  Iztia Cabanes and Santiago Garrido
LOCATION:  R4 - Aula 008
11:00 Francisco Azevedo, Joana Carmona, Tiago Paulino and Plínio Moreno  
Estimating objects’ weight in precision grips using skin-like sensors (abstract)
11:15 Pablo Bengoa, Asier Zubizarreta, Iztia Cabanes, Aitziber Mancisidor and Charles Pinto
Kinematic Estimator for Flexible Links in Parallel Robots (abstract)

11:30 David Álvarez, Maximo A. Roa and Luis Moreno
Tactile Based In-hand Object Pose Estimation (abstract)

11:00-12:00 Session FM1-R5: Communication-aware robotics (I)
CHAIRS: Alejandro R. Mosteo and Danilo Tardioli
LOCATION: R5 - Aula 009

11:00 J.M. Aguilar, Pablo Ramon Soria, B.C. Arrue and A. Ollero
Cooperative perimeter surveil using Bluetooth framework under communication constraints (abstract)

11:15 Hannes Harms, Julian Schmiemann, Jan Schattenberg and Ludger Frenich
Development of an Adaptable Communication Layer with QoS Capabilities for a Multi-Robot System (abstract)

11:30 Yaroslav Marchukov and Luis Montano
Trajectory planning under time-constrained communication (abstract)

11:45 Luis Ramos Pinto, Luis Almeida and Anthony Rowe
Balancing Packet Delivery to Improve End-to-End Multi-hop Aerial Video Streaming (abstract)

12:00-13:00 Session FM2-R1: Rehabilitation and assistive robotics
CHAIRS: Brigida Monica Faria and Luis Paulo Reis
LOCATION: R1 - Sala Juan Larrañeta

12:00 Jorge Díez, Andrea Blanco Ivorra, José María Catalán Orts, Arturo Bertomeu-Motos and Nicolas García-Aracil
Mechanical design of a novel hand exoskeleton driven by linear actuators (abstract)

12:15 Guillermo Asín, Jose Gonzalez, José L. Pons and Juan C. Moreno
Robotic Platform with Visual Paradigm to Induce Motor Learning in Healthy Subjects (abstract)

A Protocol Generator Tool for Automatic in-vitro HPV Robotic Analysis (abstract)

12:00-13:00 Session FM2-R2: Robotics and cyber-physical systems for Industry 4.0 (II)
CHAIRS: Jose Lima and Germano Veiga
LOCATION: R2 - Salón de grados

12:00 Tomislav Petković, Ivan Marković and Ivan Petrović
Human Intention Recognition in Flexible Robotized Warehouses based on Markov Decision Processes (abstract)
12:15 Thadeu Brito, Jose Lima, Pedro Costa and Luis Piardi
Dynamic collision avoidance system for a manipulator based on RGB-D data (abstract)

12:30 Luis Piardi, José Lima, Paulo Costa and Thadeu Brito
Development of a Dynamic Path for a Toxic Substances Mapping Mobile Robot in Industry Environment (abstract)

12:45 Pedro Tavares, Pedro Costa, Germaine Veiga and Antonio Paulo Moreira
Poses Optimization Methodology for High Redundancy Robotic Systems (abstract)

12:00-13:00 Session FM2-R4: Legged locomotion robots
CHAIRS: Mario Andrei Garzon Oviedo and Manuel Silva
LOCATION: R4 - Aula 008
12:00 Jorge De León Rivas, Mario Andrei Garzon Oviedo, Antonio Barrientos and David Garzón-Ramos
Study of Gait Patterns for an Hexapod Robot in Search and Rescue Tasks (abstract)

12:15 Mohammadreza Mohades Kasael
An Hybrid ZMP-CPG Based Walk Engine for Biped Robots (abstract)

12:30 Italo Oliveira, Ramiro Barbosa and Manuel Silva
Modelling, Trajectory Planning and Control of a Quadruped Robot Using Matlab R/SimulinkTM (abstract)

12:00-13:00 Session FM2-R5: Communication-aware robotics (II)
CHAIRS: Alejandro R. Mosteo and Danilo Tardioli
LOCATION: R5 - Aula 009
12:00 Teresa Seco, Carlos Rizzo, Jesús Espelosín and José Luis Villarroel
Discrete Robot Localization in tunnels (abstract)

12:15 Samuel Barrios, Natalia Ayuso, Danilo Tardioli, Luis Riazuelo, Alejandro R. Mosteo, Francisco Lera and José Luis Villarroel
Low-Bandwidth Telerobotics in Fading Scenarios (abstract)

12:30 Carlos Rizzo, Francois Chataigner, Marcel Soler, Pedro Cavestany, Daniel Serrano, Francisco Lera and Jose Luis Villarroel
Wireless Propagation Characterization of Underground Sewers towards Autonomous Inspections with Drones (abstract)

13:00-13:30 Session CS: Closing Session
LOCATION: Salón de actos

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