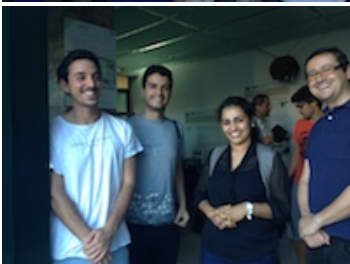## ISR Style: Connected !!!

João Sequeira, IRSg/ISR

ISR Summer Solstice Celebration

(July 22, 6PM, ISR Meeting Room)

Special issue for Holidays

ISR-Connected will now b reak for holidays and to return only on September.
To mitigate the effect this long break may have on ISR-Connected avid followers, we are launching a special issue that revisits some of the news we have be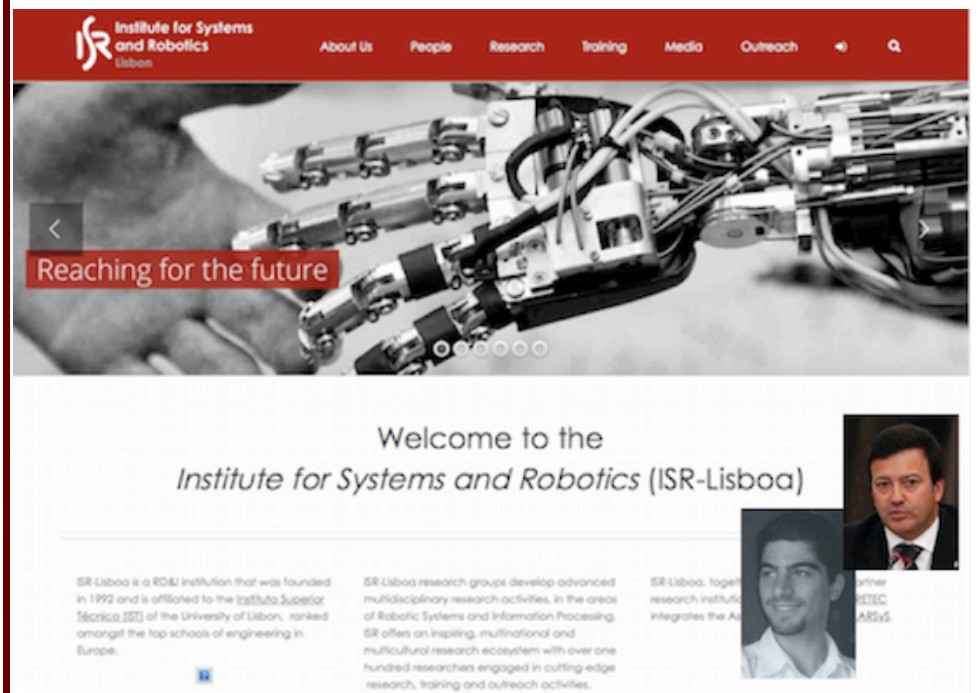en giving since the beginning of the year. This special issue reminds us all about how much has happened at ISR throughout these last months and emphasizes ISR's greatest wealth: talented and motivated PEOPLE.

Our best wishes for a sparkling holiday season!
José Santos-Victor, João Sanches, Luis custódio

New ISR web page since July 24, 2015

Congratulations to our director, José Santos-Victor, webmaster, David Afonso and all other collaborators that contibuted to this achievement. See here

LarSys, Anual Meeting 2015, July 3, 2015

João Paulo Costeira (SIPg)

[RoCKIn 2014](#), great success for ISR and IST

SocRob@Home was distinguished with the Best Demo Award, meaning it was the project putting together the best set of components including navigation, manipulation and voice interaction.

Congrats to Rodrigo Ventura and the team! ([more](#)...)

Estágios de Verão Ciência Viva
Oficina de Robótica ISR-IST
Edição 2015

Durante a semana de 27 a 31 de Julho o ISR esteve na companhia de 20 curiosos aprendizes de engenheiros.

Os alunos-estagiários do ensino secundário (11º/12º) tiveram a oportunidade de alargar os seus conhecimentos na área da robótica, em particular, de construir e programar um robô móvel para uma competição de robôs, a realizar no último dia do estágio.
Para além da montagem de um robô, os alunos também conheceram os robôs do ISR e falaram com os investigadores do ISR, em ambiente de laboratório.

Rodrigo Ventura
João Pedro Gomes
João Mendes
Pedro Roque
Alexandra Araujo

do IRSg e SIPg

In memoriam **Professor José Mariano Gago** (1948-2015)

Last Friday we were surprised and schocked by the announcement of the sudden and untimely death of Professor Mariano Gago at the age of 66. He devoted most of his life to promote knowledge and science as a basis for the betterment of our society and his vision and determination had a dramatic impact on the landscape of scientific research and outreach in Portugal and internationally.

He graduated in Electrical Engineering at IST and completed his PhD in Physics at École Polytechnique in Paris. After working in CERN for a few years, he returned to Portugal where he was a Professor of Physics at IST. From1986-89 he served as a president of JNITC, the precursor of FCT, and that was the time when he started building a long-term vision and strategy for the development of science in Portugal. Later he became minister of science and education in Portugal during the periods from 1995-2002 and 2005-2011. He was the minister who took office for the longest period in Portugal since the reestablishement of the democratic regime in 1974.

In the mid-late 80s, the research community in Portugal was uncomparably smaller than today, few research centres existed, the resources available were extremely scarce, internationalization was timid, and the visibility of science in the political agenda as well as outreach activities for the society at large were virtually minimal.

He was responsible for changing this panorama and for creating a system comprising research centres all over the country, developing a culture of scientific evaluation by international panels, establishing a policy that allowed to attract and nurture numerous young scients to work in Portugal, and promoting international protocols and partnerships with some of the best institutions around the world (e.g. CERN, ESA, ESO, MIT, CMU, and EPFL). In 2001, he introduced the concept of Associated Laboratories, as key, top-quality, strategic actors for the scientific development in Portugal and as means to strengthen the links to other societal stakeholders. Through his effort, science conquered an unprecedented weight in the political discussion in Portugal and we witnessed an evolution of many S&T indicators that could not even have been dreamed of just a few years before. He also created the Agência Ciência Viva, with centres around the country, with the mission to promote the scientific culture to the society at large and shaping the vision that societies can only progress through capacitation, knowledge, and science.

He was also a close and well known friend of us at ISR. He worked closely with our founding president, Professor João Sentieiro whom he invited to head the FCT between 2006 and 2011 and with Professor Manuel Heitor, the current president of IN+, one of our sister-units of LARSYS, who served as secretary of state for science and higher education between 2005 and 2011.

Professor Mariano Gago visited ISR many times (picture below taken in 2010 when he came along with the then EU Commissioner for Science Máire Geoghegan-Quinn) and in 2013 he served as a strategy advisor to ISR during a one-day program to discuss the research agendas of ISR's research groups and the institution as a whole.

We cannot possibly honour enough his work or overstress how much we owe him for his inspirational vision. Our lives, as scholars, researchers or as counscious citizens, would be quite different, had we not had the good fortune of benefiting from his work and enthusiasm.

The best way to pay tribute to his memory is to remember his transformational legacy, to keep on fighting to improve our work everyday, and to spread the notion that knowledge and science are key to promote the progress and well-being of our societies, in Portugal and elsewhere in the world (see more in [more](#)).

[José Santos-Victor](#)
(ISR Director)([more](#))

Gasparzinho (MOnarCH)
IRSg/ISR

Não se trata de ficção, as imagens revelam a materialização do imaginário. No Instituto Português de Oncologia de Lisboa é o centro das atenções há dois anos, fruto de um projeto europeu dirigido pelo Instituto Superior Técnico e desenvolvido pelas empresas IDMind e SelfTech para criar um robot que interaja com as crianças...(mais)

GASPARZINHO
Um robot social na pediatria do IPO

A arte que é ciência e a ficção científica real

O que têm em comum um académico de engenharia robótica e um artista plástico? Um e outro expressam-se através da tecnologia. Será que a tecnologia ajuda a mudar a ciência e a arte?
(mais)

(Pedro Lima, IRSg/ISR)

Press

Investigadores do ISR testam robô MOnarCH no IPO de Lisboa

A equipa de investigadores MOnarCH, do Instituto de Sistemas e Robótica (ISR) do Técnico, liderada por João Sequeira, está a testar as capacidades de interação do robô com o mesmo nome na enfermaria pediátrica do IPO (Instituto Português de Oncologia) de Lisboa.

O robô MOnarCH, que circula pelos corredores do IPO, não deixa as crianças ali presentes indiferentes. "Desde meados de 2014 temos feito vários ensaios para avaliar a forma como as crianças (...) veem o robô num cenário real. A resposta tem sido muito boa e tem permitido tirar lições importantes sobre a introdução de robôs em ambientes sociais", explica **João Sequeira (IRSg/ISR)**.

O robô branco de 120 centímetros, que interaje com alegres "Olá, queres brincar comigo?", deixa as crianças muito curiosas e entusiasmadas. Muitas vezes ouve-se "O robô está a rir!".

O Projeto MOnarCH está a ser desenvolvido por um consórcio de I&D europeu que se propôs, desde 2013, a construir um protótipo robótico para interagir num contexto real, com crianças e jovens hospitalizados, propondo atividades educativas e lúdicas. Através da combinação de tecnologias já existentes, um robô inovador e paradigmas avançados para representação de ambientes sociais, os investigadores esperam atingir um desempenho que demonstre objetivamente que os robôs sociais são uma realidade e uma necessidade no nosso quotidiano.

(From...)

A robótica portuguesa quer dar cartas a nível internacional.

Um dos projectos é este robô assistente para exercício e fisioterapia, que está a ser desenvolvido com financiamento do Programa CMU Portugal

(...) O projecto que junta investigadores do Instituto Superior Técnico, da Faculdade de Motricidade Humana da Universidade de Lisboa, da Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa e do Instituto de Tecnologias Interactivas da Madeira, foi seleccionado no final do ano passado para receber financiamento do programa CMU Portugal – convénio em que a Universidade Carnegie Mellon nos Estados Unidos é parceira da universidade portuguesa.

Os 600 mil euros de investimento no âmbito das chamadas Iniciativas Empreendedoras de Investigação vieram dar fôlego a um robô assistente que começou a ser desenvolvido há dois anos e ainda estava a tentar superar aspectos complicados da robótica como a mobilidade e o reconhecimento espacial, explicou ao i o coordenador do projecto **Alexandre Bernardino**, do **Laboratório de Visão Robótica e por Computador (VisLab) do Instituto de Sistemas e Robótica** (ISR) do Técnico...

(mais)

Paisagens ocultas
Carlos Fernandes (Laseeb)

Haverá uma diferença significativa entre a criatividade orientada para a ciência e a criatividade na arte? Este é o tema central de Paisagens Ocultas. Partindo dessa questão, em resposta à qual arriscamos um «não», tentaremos definir a natureza da criatividade, identificar e entender as causas do cisma entre a arte e a ciência, estudar o papel da fotografia nos diálogos entre estas duas culturas, e sondar a hipótese de uma criatividade distribuída entre o homem e a máquina. Sabemos que o campo de acção é amplo, mas não esperamos (nem aspiramos a) conclusões definitivas. Como dizemos na introdução, «Paisagens Ocultas não deixa de ser um conjunto de notas, entre factos históricos e especulações arriscadas, que anuncia mais dúvidas do que certezas.» E tanto a arte como a ciência alimentam-se do exercício da dúvida... (more)

Carlos Fernandes, Laseeb/ISR

Feature Stories - Portugal ICT: Extending the Age of Discovery

A liberal interpretation of the term 'information and communication technologies' (ICT) could easily connect some of the earliest examples to Portugal. How? Thanks to Portuguese technological advances in mapping and navigation, its seafarers were able to discover and later communicate (by sea) with the new network of colonies. Today, Portuguese researchers remain at the forefront of modern networking technology and a good many other ground-breaking fields, from robotics to radio and wireless developments... (more)

(sent by Pedro Lima, IRSg)

Portugal e Noruega reforçam cooperação científica na área do mar

Ciências do mar, prospeção de combustíveis fósseis offshore, parques eólicos flutuantes, produção de bio algas, biotecnologia marinha e tecnologias subaquáticas são algumas das áreas de investigação e da economia que Portugal poderá vir a beneficiar com o reforço da cooperação com a Noruega.
(...)

Foi ainda assinado um Memorando de Entendimento entre a Fundação para a Ciência e a Tecnologia (FCT) e o Conselho de Investigação da Noruega para o **reforço da cooperação científica e tecnológica nas áreas do mar e das ciências** marinhas, mais especificamente para o apoio de **projetos de investigação** direcionados para as áreas da biotecnologia marinha, pescas, aquacultura e transformação de pescado, gestão de ambientes marinhos, **tecnologia submarina e de mar profundo** e energia ... (mais)

O nosso colega **António Pascoal (DSORg/ISR)** foi indicado pela FCT para integrar a comitiva que viajou para Oslo com o Presidente da República na qualidade de investigador e perito em tecnologia submarina.

Investigadores portugueses distinguidos por associação americana de doentes de cancro

Uma equipa de investigadores do IPATIMUP e do Instituto Superior Técnico foi distinguida pela associação americana de doentes No Stomach For Cancer, recebendo 25 mil euros para desenvolver testes genéticos de cancro gástrico, anunciou hoje a instituição portuense.
(...)
Agora, pela primeira vez, é distinguida uma equipa composta apenas por elementos portugueses: Raquel Seruca e Joana Paredes, do IPATIMUP, e **João Sanches (LASEEB/ISR)**, do **Instituto de Sistemas e Robótica** e do Departamento de Bioengenharia do Instituto Superior Técnico da Universidade de Lisboa ... (more)

other links: tvi24, Notícias Universidade do Porto, Porto Canal, TudoNumClick

Project team
"Todays present, tomorrow's future on the study of germline E-cadherin missense mutations"

(da esquerda para a direita: Joana Paredes, João Sanches, Marta Pinto, Raquel Seruca, Joana Figueiredo e André Vieira)

Congratulations by the
IbPRIA 2015 Best Paper award

Robust 3D Active Shape Model for the Segmentation of the Left Ventricle in MRI
Carlos Santiago, Jacinto C. Nascimento and Jorge S. Marques

Abstract

3D Active shape models use a set of annotated volumes to learn a shape model. The shape model is defined by a fixed number of landmarks at specific locations and takes shape constraints into account in the segmentation process. A relevant problem in which these models can be used is the segmentation of the left ventricle in 3D MRI volumes. In this problem, the annotations correspond to a set of contours that define the LV border at each volume slice.

However, each volume has a different number of slices (i.e., a different number of landmarks), which makes model learning difficult. Furthermore, motion artifacts and the large distance between slices make interpolation of voxel intensities a bad choice when applying the learned model to a test volume. These two problems raise the following questions: 1) how can we learn a shape model from volumes with a variable number of slices? and 2) how can we segment a test volume without interpolating voxel intensities between slices? These questions will be addressed by using a robust 3D active shape model that can be used to segment the left ventricle in cardiac MRI.

Jacinto
Nascimento
SIPg/ISR

Jorge Salvador
Marques,
Vislab/ISR

Prémios

Prémio Científico IBM 2014

Ricardo Cabral (SIPg/ISR) won Portugal's most coveted prize for Research in Computer Science/Information and Communication Technologies

Prémio Científico IBM atribuído a estudo na área da visão computacional

Ricardo da Silveira Cabral ganhou o prémio científico IBM com uma tese de doutoramento que define metodologias que ajudam robôs e computadores a verem como os humanos.

Ricardo da Silveira Cabral é o vencedor do Prémio Científico IBM referente a 2014. O investigador açoriano, que se doutorou em Engenharia Eletrotécnica e de Computadores pelo programa conjunto do Instituto Superior Técnico e da Carnegie Mellon University (CMU), dos EUA, foi premiado pela autoria do trabalho intitulado "Unificação de modelos low-rank para problemas de aprendizagem visual".

«A tese de doutoramento de Ricardo da Silveira Cabral visa dar mais um passo na área da visão computacional, ao pretender levar o computador a ver como os humanos», refere o comunicado da IBM sobre o vencedor daquele que é, provavelmente, o mais antigo prémio científico para a área das tecnologias atribuído em Portugal.

Durante a sua investigação, Ricardo da Silveira Cabral desenvolveu uma metodologia que permite combinar dois modelos de aprendizagem: um modelo que já conta com mais de 30 anos de uso e outro que é mais recente.

A investigação pode ter aplicação na área da robótica, arquitetura, realidade virtual, efeitos especiais, navegação e mapeamento de território. Não é só a IBM que tem dado o devido reconhecimento a Ricardo da Silveira Cabral. Atualmente, o investigador português trabalha na Apple. Antes já havia trabalhado na Google – onde ajudou a onde ajudou a criar o Indoor Maps. (more)

Prémio Prof. Luís Vidigal edição 2014 @ ISR
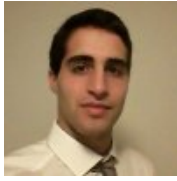
Pedro Caldeira Abreu (Orientador: António Pascoal DSORg/ISR)

(...)
O Júri do Prémio, presidido pelo Prof. Carlos Salema e constituído por colegas do DEEC, do DEI, da FEUP/UP e da FCT/UNova, avaliou recentemente os trabalhos a concurso, tendo-se deparado com um grande número de trabalhos de elevada qualidade, o que muito dificultou a sua tarefa, mas também muito nos regozija. Após avaliação de todos os trabalhos candidatos, tendo em consideração o seu mérito científico e tecnológico e o seu grau de inovação, o Júri deliberou, por unanimidade, atribuir o Prémio Prof. Luís Vidigal, da edição de 2014 ao trabalho intitulado:

"Sensor-based Formation Control of Autonomous Underwater Vehicles"

apresentado pelo Eng. **Pedro Caldeira Abreu**, Mestre em Engenharia **Aeroespacial**, orientado pelo Prof. **António Pascoal** do Dept. de Eng. Eletrotécnica e de Computadores do Instituto Superior Técnico (e do DSORg/ISR).

CiênciaHoje
Sexta-feira, 31 de Julho de 2015

Portugal é o 12º país europeu com mais projectos submetidos ao Horizon 2020

Com 397 projectos - dados de 24 de Junho de 2015 - Portugal é o 12º país europeu que mais concorreu ao Horizon 2020, Programa-Quadro Comunitário de Investigação & Inovação 2014-2020. Por apenas dois lugares falhou o «top ten» liderado pelo Reino Unido. Os dados são revelados por Nikolaos Floratos, um grego que tem trabalhado em empresas de consultoria e informação tecnológica...
(mais)

SPR
SOCIEDADE PORTUGUESA DE ROBÓTICA

Prémio SPR Tese de Doutoramento para **Bruno Damas**

Prémio SPR Tese de Doutoramento para Bruno Damas

É atribuído anualmente pela Sociedade Portuguesa de Robótica o Prémio SPR TESE DE DOUTORAMENTO ao melhor trabalho de dissertação de Doutoramento, elaborado no âmbito das áreas científicas da Robótica e afins, com vista a estimular a inovação e o rigor do trabalho de investigação, bem como proceder à divulgação científica de trabalhos de qualidade relevante.

O prémio SPR-2015 foi atribuído ao Doutor Bruno Damas, com a tese intitulada:
Learning and Sensorimotor Coordination of Anthropomorphic Robotic Systems
que foi desenvolvida no VisLab do ISR/IST com orientação de Prof. José Santos-Victor e defendida em Outubro de 2014.
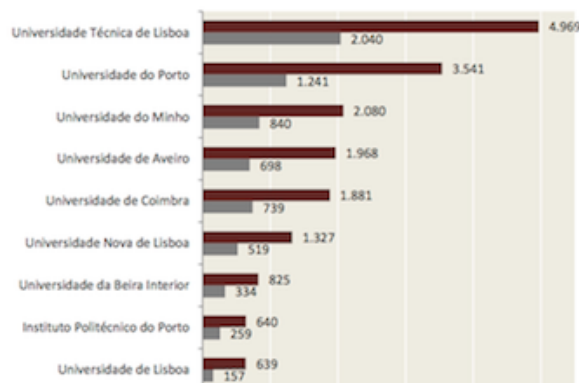
Parabéns ao premiado e ao seu orientador .

(sent by Isabel Ribeiro, IRSg/ISR)

Indicadores Bibliométricos 2008-2012, em ENGENHARIA

DGEEC
DIREÇÃO-GERAL DE ESTATÍSTICAS DA EDUCAÇÃO E CIÊNCIA

Número anual de publicações

Instituição	valor cinzento	valor vermelho
Universidade Técnica de Lisboa	240	560
Universidade do Porto	160	425
Universidade de Aveiro	113	301
Universidade do Minho	122	286
Universidade de Coimbra	101	247
Universidade Nova de Lisboa	72	182
Universidade da Beira Interior	48	112
Instituto Politécnico do Porto	29	73
Universidade de Lisboa	20	68

Instituição	valor cinzento	valor vermelho
Universidade Técnica de Lisboa	2.040	4.969
Universidade do Porto	1.241	3.541
Universidade do Minho	840	2.080
Universidade de Aveiro	698	1.968
Universidade de Coimbra	739	1.881
Universidade Nova de Lisboa	519	1.327
Universidade da Beira Interior	334	825
Instituto Politécnico do Porto	259	640
Universidade de Lisboa	157	639

Impacto agregado da instituição (mais aqui)

The heartbeat of the ISR admin support team

Along the year(s), the ISR admin support team struggles to overcome a massive number of obstacles (aka "admin procedures") so that the research activities can proceed in a smooth way. They shield (to the extent possible) ISR researchers from the complex maze of public administration and bureaucracy, in a quest to guarantee our compliance with a plethora of complex and time-evolving legislation and regulations!

They're like an heart (amongst others!) beating inside ISR's chest. You don't always notice how critical it is, until something goes wrong!

From right to left: Filomena Viegas, Ana Santos, Ana Mateus, Alexandra Araújo, Fátima Martinho and Filipa Almeida. The photographer (also pictured) of this award-deserving photo is our dedicated lab technician, Ricardo Nunes!

José Santos-Victor
(Director)

Onde estavam no 25 de Abril ?

Eu ainda era só um desejo dos meus pais. Numa visão romântica dos acontecimentos, gosto de pensar que sou um pouco filha de Abril, nasci 10 meses depois :)
Rita Cunha (DSORg)

O Luís Sebastião foi pai :)

Aqui vai a primeira "selfie" do Tiago com o Papá

Nasceu a 15 de Janeiro de 2015 com 3480g
Parabéns Luís

People

Homenagem às mulheres do ISR
Dia Internacional da mulher

Ana Santos,
Secretariado ISR

Isabel Ribeiro
IRSg/ISR

Ana Mateus
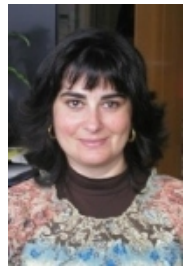Secretariado ISR

Rita Cunha
DSORg/ISR

Alexandra Araújo
Secretariado ISR

Fátima Martinho
Secretariado ISR

Patrícia Figueiredo
LASEEB/ISR

Filomena Viegas
Secretariado ISR

Filipa Almeida
Secretariado
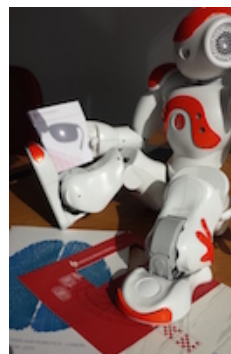DSORg

Maragarida Silveira
SIPg/ISR

Isabel Lourtie
SIPg/ISR

BREAKING NEWS:
ISR hosts the first robotic observation of a solar eclipse

On Mar 20 2015, ISR hosted the first robotic observation of a solar eclipse that is documented in the companion picture. As the Moon passed between Earth and the Sun, the robot at ISR reported a significant occlusion of the image of the Sun, marking the March equinox and the beginning of spring. This is the last total solar eclipse visible in Europe until the eclipse of August 12, 2026.
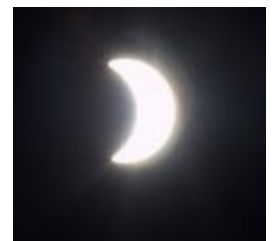
Enjoy spring!
José Santos-Victor (VisLab/ISR)

PhD defense

João Almeida
DSORg/ISR

Control Over Networks and the Event Based Paradigm: Application to Multi-Agent Systems

The thesis addresses multi-agent systems that consists of a
set of agents, each one with dynamics modeled by a linear time-invariant system, connected by a communication network that provides them with the means to exchange information.
(...)

Advisors (from DSORg/ISR)

Carlos Silvestre   António Pascoal

Andreas Hausler
defended (March26, 2015) his PhD thesis entitled

"Mission Planning for Multiple Cooperative Robotic Vehicles"

Andreas defended his PhD thesis very successfully.
The thesis addresses the problem of cooperative motion planning of autonomous marine robots. The theoretical
tools used borrow from Optimal Control Theory.

(Adviser: António Pascoal, DSORg/ISR)

Congratulations to Our people and work

Congratulations to our new doctor **Susana Brandão** and advisors

Heat Based Descriptors For Multiple 3D View Object Recognition

This thesis contributes to the field of object recognition by focusing on how to represent objects, allowing for their identification from an RGB-D sensor observations, considering that objects can have strong similarities or very complex shapes.
  We extend the heat diffusion based family of descriptors to account for 3D partial views, which correspond to the 3D visible surface of an object as observed from a single viewing angle. In particular we introduce the Partial View Heat Kernel (PVHK) and the Partial View Stochastic Time (PVST). Both descriptors represent partial views by the distance between the partial view occlusion boundary and a reference point at the surface center. To represent distance, descriptors use a solution to the heat diffusion equation, simulating heat diffusing from a source in the reference point to the whole surface. PVHK represents distances by the temperature at the boundary points at a fixed time, while PVST considers the time it takes for the boundary points to reach a fixed temperature. By interpreting RGB values as associated with the diffusion rate, e.g., we assume that heat diffuses faster in the blue parts of the object than in red, we introduce descriptors that change not only with the RGB values but also with their geometric distribution over the object surface ...
Advisers: João PauloCosteira (SIPg/SR) andMauela Veloso (CMU)

Congratulations to our new doctor **Luka Lukic** and advisors

On June 4th, Luka Lukic defended his PhD thesis at IST.
The title of the thesis was "Visuomotor coordination in reach-to-grasp tasks: from humans to humanoids and vice versa" and it was supervised by Professors José Santos-Victor (IST) and Aude Billard (EPFL) in the framework of the IST-EPFL Joint doctoral Initiative.
human studies (motion and gaze tracking) to create a model for reaching and The thesis addresses the problem of reaching and grasping in humans and robots and takes a multidisciplinary perspective including neuroscience, machine learning and robotics. It uses data acquired during grasping controllers, with coupled dynamical systems, for humans and robots. Further, it relies on studies concerning visuo-motor neurons to create a model explaining hpw motor information primes visual attention. Finally, it provides a comprehensive theorethical (neuroscientific) study explaining how the brain deals with multiple coordinate frames and how the different movements (eye-head-arm-hand) are coordinated.

 Professors Giulio Sandini, David Vernon, who were opponents of the defense, offered two seminars on June 4 in topics related to Robotics, Brain and Cognition. The other opponents were Prof Estela bicho (U.Minho) and Alexandre Bernardino (IST).

Advisors: José Santos-Victor (Vislab/ISR/IST)   Aude Billard (EPFL)

Our PhD students in previous isr-Connected editions

Duarte Dias

Tiago Veiga

Catarina Barata

Pedro Fazenda

Alicja Wasik

Teresa Murta

David Afonso

Lorenzo Jamone

Athira Nambiar

PhD Defense of **André Dias**
Multi-Robot 3D Target Estimation Under Uncertainty

From left to right: Alexandre Bernardino (VisLab/ISR), Luis Merino (U Pablo de Olive, Sevilla). Eduardo Silva (ISEP), André Dias (ISEP, the new Doctor), Pedro Lima (IRSg/ISR), Isabel Ribeiro (IRSg/ISR), Bernardo Cunha (U. Aveiro)

Title: **Multi-Robot 3D Target Estimation Under Uncertainty**
Candidate: **André Dias**
Date: February 24th 2015, at 10:00,

PhD Defense of **Behzad Bayat**

Nonlinear Robust Adaptive State Estimation

This thesis addresses the problem of navigation and localization of autonomous marine vehicles ...

Motivated by the above considerations, the first part of this thesis is dedicated to the observability analysis, where key observability issues pertaining to the problem of range-based Autonomous Underwater Vehicle (AUV) localization using single and multiple fixed beacons, with/without the presence of constant unknown ocean currents are addressed. In particular, conditions under which it is possible to reconstruct the initial state of the related continuous system model with continuous or discrete (but not necessarily uniformly sampled) measurements are derived. The second part of the thesis is devoted to the observer design. Using the derived observability properties of the system and the concepts of minimum-energy estimators applied to continuous-time processes with event-based discrete measurements, projection filters, and multiple-model techniques, we propose a novel observer to solve in real time the localization problem of an AUV with the possibility of drifting due to unknown ocean currents ...

António Pedro Aguiar (DSORg/ISR)

António Pascoal, DSORg/ISR

ISR Affiliation

Bibliographic tools

SJR SCImago Journal & Country Rank

ISI Web of Knowledge℠

Journal Citation Reports®

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[ISR at Google](#)
in **2015** (by date)

ResearchGate

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Institute for Systems and Robotics (ISR)
Technical University of Lisbon

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| 35 PUBLICATIONS | 48.50 Total Impact Points | 1.39 Avg. Impact Points | 70 Authors |

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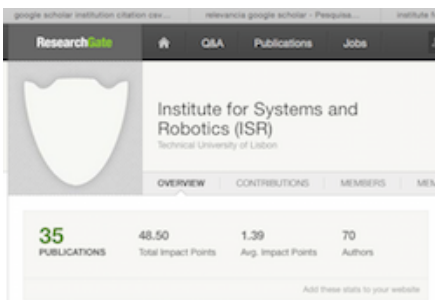
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ISR institutional description

The Association of Instituto Superior Técnico for R&D (IST-ID) is a private not-for-profit research institution, fostering knowledge transfer and the development of RD&I activities and projects. IST-ID provides support to IST R&D Units, in terms of installations, campus facilities, services.

IST is the premium engineering, science and technology school in Portugal, integrating competences from all fields of engineering and fundamental sciences, creating a unique multidisciplinary scientific environment. Its mission is to provide top quality higher education as well as developing RD&I activities that meet the highest international standards.

The research will be conducted at the Institute for Systems and Robotics (ISR/IST), an IST's R&D unit, home to more than 40 PhDs and part of the Associated Laboratory LARSyS. ISR/IST is actively engaged in a new generation of research challenges pushing the frontiers of knowledge, while offering world-class doctoral training with top universities (e.g. dual/joint degrees with MIT, EPFL, CMU) and fuelling the collaboration with industry. ISR/IST develops state-of-the-art engineering solutions and projects with a clear societal impact, and has a long track record of participation in EU and other international projects. ISR/IST hosts 5 groups working in Robotics and Information Processing, Systems and Control Theory, Signal Processing, Computer Vision, Optimization, Intelligent Systems and Biomedical Engineering.

ISR Institute for Systems and Robotics Lisboa

Numbers from our database ([here](#))

(2015)

Journal papers	44
Books	2
Book chapters	5
Conference papers	13
PhD thesis	6

(not updated)

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Robotics History: Narratives and Networks

In 1961, George Devol and Joe Engelberger put the world's first industrial robot on the factory floor of General Motors, and in the half-century that followed, robots have found their way into surgery rooms, scientific laboratories, battlefields, search and rescue situations, Mars, and even our homes as vacuum clean- ers, toys, and security guards... ([more](#))