

Jaume I University of Castellon (UJI), Spain

Descrição:

A equipe da Universidade Jaume I agrupa pessoas que pertencem ao Departamento de Ciência da Computação e Engenharia e compartilham um interesse comum: raciocínio sobre espaço, manipulação, percepção, redes de sensores e atuadores e movimento no âmbito de sistemas robóticos, mantendo sempre em mente um ponto de vista aplicado. Projetos de pesquisa recentes tratam de cooperação robótica, controle por sensor, pega e manipulação e robótica em rede. As instalações disponíveis do laboratório incluem mais de vinte robôs móveis, variando de miniaturas (2,5 cm em tamanho), robôs Alice, sistemas baseados em Lego, a robôs móveis completos de tamanho médio (Pioneer) e manipuladores móveis de alto peso (por exemplo, o robô de resgate Mobile Platform para ambientes perigosos).

Experiência prévia:

O grupo esteve envolvido em um grande número de projetos financiados pela União Européia, governo espanhol, governo local e várias empresas espanholas e fundações privadas. Projetos em andamento no Laboratório de Inteligência Robótica incluem três projetos financiados pela Comissão Européia: FP6 GUARDIANS (Group of Unmanned Assistant Robots Deployed In Aggregative Navigation supported by Scent detection - Grupo de Robôs de Assistência Não tripulados Implantado em Navegação Agregativa suportados pela Detecção de Aromas), FP7 EYESHOTS (Heterogeneous 3-D Perception Across Visual Fragments - Percepção 3D Heterogênea em Fragmentos Visuais), FP7 GRASP (Emergence of Cognitive Grasping through Emulation, Introspection, and Surprise - Aparecimento de Pega Cognitiva Através de Emulação, Introspecção e Surpresa) e FP7 TRIDENT (Marine Robots and Dexterous Manipulation for Enabling Autonomous Underwater Multipurpose Intervention Missions - Robôs Marinhos e Manipulação Dextro para Missões de Intervenção Multitarefa Subaquáticas Autônomas).

Dr. Raul Marin received a B.Sc. degree in Computer Science Engineering (1996) and a Ph.D. in Engineering (2002) by the Jaume I University of Castellon (Spain). In 1997, he joined Lucent Technologies (Bell Labs Innovations) and worked as researcher, software developer and software architect at the Switching and Access Division. Now, he is working as researcher at the Department of Computer Science of the Jaume-I University (Spain) and lectures Networking and Distributed Systems in the same university. His research interests lie mainly in the field of Multirobot Distributed Systems, High-Performance FPGA-based Vision, Internet Telerobotics, Network Protocols, Human-Computer Interfaces, and Tele-Education. He is author or co-author of multiple research publications on these subjects.

Dr. Pedro J. Sanz is Associate Professor of Computer Science and Artificial Intelligence at Jaume-I University (Spain), researcher at the Robotic Intelligence Lab and head of the Multimedia Research Group. He holds a B.Sc. in Physics by the University of Valencia (1985, Spain), M.Sc in Engineering (CAD/CAM) from the Polytechnic University of Valencia (1989, Spain) and a Ph.D. in Computer Engineering by the Jaume I University of Castellon (1996, Spain). His current research interests are Sensory-Guided Grasping, Telerobotics and Human-Robot Interaction.

Dr. Angel Pasqual del Pobil is Professor of Computer Science and Artificial Intelligence at Jaume I University (Spain), and founder director of the Robotic Intelligence Laboratory. He holds a B.S. in

Physics (Electronics, 1986) and a Ph.D. in Engineering (Robotics, 1991), both from the University of Navarra. In the period 1986-1991 he also did research at the University of California at Santa Barbara, at the C.E.I.T. (Center for Technical Research and Studies) in San Sebastian (Spain) and at A.M.A.I.A. (Architectures, Methodes et Applications en Informatique Avancee) in Bayonne (France). His past and present research interests include: humanoid robots, service robotics, internet robots, motion planning, visually-guided grasping, robot perception, multimodal sensorimotor transformations, visual servoing, learning for sensor-based manipulation, and the interplay between neurobiology and robotics.

Dr. Enric Cervera has 11 years research experience in robotics and artificial intelligence. After completing his Ph.D. in Computer Science in 1997, he achieved a position as Associate Professor of Computer Science and Artificial Intelligence at Jaume I University in 1999. Since then, he has led several research projects funded by the Spanish Government and the Valencian Regional Government. His present research deals with collaborative approaches to robotics and sensor-based control.

Other members: Dr. Mario Prats, Dr. Antonio Morales, Dr. Gabriel Recatalá, Prof. Germán León, Mr. Jorge Sales, Jose Vicente Martí.

Zentrum für Telematik e.V. (ZfT) (Centro de Telemática), Alemanha

Descrição: O Instituto "Zentrum für Telematik" (ZFT), fundado em 2007, tem como principal objetivo promover a ciência e pesquisa na área da telemática. É um Instituto de pesquisa orientado para aplicação sem fins lucrativos, que tem equipamentos no estado-da-arte da alta tecnologia de última geração e infra-estrutura. É controlado pela associação "Zentrum für Telematik e.V." que é uma cooperação entre instituições de pesquisa, como a Universidade de Würzburg, e a indústria, como por exemplo, Bosch Rexroth, Diehl BGT GmbH & Co KG, Koenig und Bauer AG, Navigon AG, Wittenstein AG, Siemens AG, etc. O ZFT preenche a lacuna entre a pesquisa, desenvolvimento e produto, fornecendo uma plataforma para mostrar à indústria o que é possível com tecnologias modernas. Além disso, o ZFT cria prova de demonstração de conceitos para novos desenvolvimentos para exploração futura na indústria e especialmente pequenas e médias empresas.

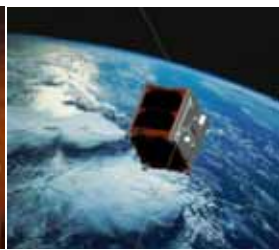
As áreas de pesquisa principais do ZFT estão na área da telemática: interação homem-máquina, sensores (aquisição de dados, transformação, fusão e interpretação), telecomunicações, operação remota, automação e controle. As áreas típicas de aplicação cobrem desde tele-educação, tele-medicina, tele-manutenção, teleoperação e coordenação de robôs móveis a tecnologia espacial. A seção "Robótica e Telemática", que representa a base científica da ZFT, dá ênfase na pesquisa em sistemas autônomos e teleoperados, em especial sistemas de engenharia e sensores de controle, que abrangem uma gama de aplicação de robôs de transporte industrial para satélites de pico. Atualmente, o ZFT exerce atividades de projeto com a indústria (EADS Deutschland, IABG, informar, etc) e agências (União Européia, Agência Espacial Europeia ESA, etc). De interesse específico para o tema proposto é a base técnica da equipe de pesquisadores em aplicações da telemática e robótica, como teleoperação e criação de redes de sistemas móveis, sistemas de sensores de robôs móveis para navegação, métodos de controle avançados e interfaces de usuário avançadas com base em métodos de realidade aumentada e misturada.

Para o projeto FENIX em particular a expertise do corpo técnico associado ao projeto EU-FET-project PeLoTe provê suporte as tecnologias robóticas para bombeiros e em sistemas de pequenos satélites (isto é UWE-pico satélites) são relevantes.

ZfT tem acesso a cerca de 20 sistemas robóticos móveis avançados (incluindo o proprietário MERLIN rovers), 2 pequenos helicópteros não tripulados e o pico satélite UWE, bem como *outdoor rover test range*, uma estação terra base com uma S-band-antenna e um centro de tele-serviço.



PeLoTe-Tests
rovers



MERLIN-rover



UWE-2 in orbit



cooperating helicopter and

Prof. Dr. Klaus Schilling is Ordinarius (full professor) for Robotics and Telematics at the Julius-Maximilians-Universität Würzburg. Before returning to academia he worked in space industry (Astrium Ltd.) on autonomous control and teleoperation aspects for interplanetary missions. His research interests include supervisory controls for spacecrafts, mobile robots, virtual laboratories in tele-education, and tele-servicing of industrial automation systems, documented in about 200 scientific publications. He is chairman of the IEEE Robotics and Automation Society Technical Committee on Networked Robotics and member of IFAC committees on Telematics, Mechatronics, and Intelligent Vehicles, steering committee member of the IFAC Technical Committee on Aerospace, topic editor Systems Engineering and Control of the journal Space Technology. He served as associated editor of the journal Control Engineering Practice and has been consulting professor at Stanford University from 2002 -2006.

Marco Schmidt studied computer science at the University of Würzburg and received his diploma in May 2006. He started his PhD-studies at the Department of Computer Science VII in June 2006. Currently he is working as research assistant focused on distributed satellite and ground station systems. His research interests include satellite communication, optimization of ground station networks and small satellite development. He was involved in the UWE-1 and UWE-2 picosatellite missions and gained a lot of experience in the field of small satellite operation.

Maximilian Drentschew, graduated as “Diplom Informatiker” at the University of Karlsruhe’s (KIT) faculty of Computer Science in 2009 and wrote his major thesis at the German Aerospace Center (DLR), contributing to the phase-A studies of the “AsteroidFinder” satellite project. Currently he is doing research as part of his PHD focusing on distributed systems of very small satellites. His particular interests are self-organizing communication of multi-satellite-systems (e.g.: pico-satellites and MANETs). His last activity was the coordination of a feasibility study, performed by ZfT, Uni Würzburg and the Fraunhofer Institute for Integrated Circuits (IIS) in which application scenarios and fundamental technologies for formation flights and swarms of very small satellites were investigated. One main aspect of the project was put on innovative inter-satellite links which allow

forming flexible and self-organizing networks of pico- and nano-satellites, which is particularly interesting for multi-satellite systems of more than 2 participants.

Markus Sauer, graduated in Computer Science within the framework of the PeLoTe-project supporting search and rescue teams of fire fighters. In 2011 he completed his PhD on design of advanced user interfaces for remote robot operations including augmented reality approaches.

Sheffield Hallam University (SHU), Reino Unido

Organização: A contribuição da SHU para o projecto será através do Materials and Engineering Research Institute (MERI e (MERI); um Instituto de investigação de pesquisa básica e avançada e desenvolvimento de materiais inovadores em engenharia de sistemas baseados em computador. Mobile Machines and Vision Laboratory (MMVL) em conjunto com MERI, tem um foco em AI, modelagem matemática, robótica e Robótica coletiva.

Relevante experiência de investigação: O MMVL esteve envolvido em vários projetos em robótica e é membro da rede Européia de robótica (The European Robotics Network); tendo participado de uma série de projetos de Robótica Europeus MiCRoN (EU FP5 from 2002 till 2005), IGroup (EU FP6-IST from 2004 till 2008), Replicator (EU-FP7 from 2008-2013) e coordenação dos projetos GUARDIANS and VIEW-FINDER (EU FP6-IST from 2006-2009). Informações em (<http://www.shu.ac.uk/research/meri/>).

Pesquisadores:

Dr. Jacques Penders has a background in Philosophy and Mathematics and research experience in robotics, temporal logic, logistics, and computer science and ethics of technology. He worked for over 15 years at KPN Research in The Netherlands. He joined Sheffield Hallam in 2003. Dr Penders started his research in AI and robotics applied to Logistics. In 1989 Dr. Penders built a small mobile robot using the subsumption architecture, which in fact was the first one of this kind in The Netherlands. Dr Penders is a member of The Dutch association for Logic and member of the UK-funded Biologically Inspired Robotics Network (Bironet) and member of EUCogII - the 2nd European Network for the Advancement of Artificial Cognitive Systems, Interaction and Robotics.

Dr. Lyuba Alboul is an internationally well known for her work in surface reconstruction. She obtained her PhD in Geometry and Topology from Moscow University 'RUDN'. Dr L. Alboul has published more than 60 scientific works in pure and applied mathematics and AI. She has been involved in many research projects as a key researcher and expert. Her present research concentrates on developing a geometric background for computational models originating from two and three dimensional data. She recently worked in the Guardians and ViewFinder projects on mapbuilding.

Dr Alan Holloway is a Lecturer/Researcher in the areas of embedded systems and sensors and obtained his PhD in the field of chemical sensing and electronic measurement techniques from Sheffield Hallam University. He has worked and consulted on several industrial collaborations and European projects and has published in the areas of thin films, chemical sensing, sensor arrays and measurement techniques. He is also a current member of the IET and IEEE.

Dr George Chliveros is a systems engineer with postgraduate and doctoral studies in pattern recognition. For the past six years he has been working on a number of projects including Guardians and ViewFinder. His current research interests are on sensor models, fusion and mobile robotic platforms middle-ware. He is a Member of the Institute of Engineering and Technology, and the EU Cognition Network, as well as Fellow of the Royal Statistical Society.

Fire Service of Castellon Town Council (FS-CTC), Espanha, (Sub-Contracting)

Descrição: "Castellón de la Plana" é a capital da província de "Castellón", na Espanha, no leste da Península Ibérica, na Costa del Azahar do mar Mediterrâneo (40° N 0° W). Sua população é de aproximadamente 170.000 habitantes.



O Serviço de Incêndio do Conselho da Cidade de Castellón dedica-se a:

- serviços de prevenção contra incêndios
- serviços de segurança contra acidentes de incêndio
- emergências

Tarefas principais: Requisitos de sistema e métodos e medidas baseados no homem (WP1).

Experiência prévia: SYFIRE colaborou nos requisitos do usuário dos WPs do projeto FP6 GUARDIANS.

Juan Jose Beltran is the head of the service, and he has got a broad experience in commanding emergencies, training fire fighters and performing prevention activities.

More information about the service can be found in:

(<http://www.castello.es/generico.php?cod1=38&cod2=213>)