



University POLITEHNICA of Bucharest
Faculty of Automatic Control and Computers



Research Position in Intelligent IT for Robotics – University Politehnica of Bucharest

Context

The Faculty of Automatic Control and Computers (A&C), part of the most important technical university in Romania - the University Politehnica of Bucharest - is the coordinator of the FP7-REGPOT-2010-1 ERRIC Project (<http://www.erric.eu/>), the main objective of which is to empower existing excellence in research by unlocking its significant research potential and enhancing its national and regional leadership position in selected areas of Intelligent Information Technologies (IIT). Throughout this project, fostering high quality research in the area of A&C expertise "Cognitive and Collaborative IT for Service Oriented Robotics and Manufacturing" will lead to a comprehensive and sustainable integration of A&C into the wider European Research Area context. The A&C research laboratories group more than 120 people and dispose of several experimental platforms. The person to be hired will be integrated in the Robotics and AI Laboratory and will perform research and development activities within the SORM team (Service Oriented Robotics and Manufacturing) which comprises eight academic staff and twelve Ph.D. students.

Research activities will be carried out at the premises of the SORM team of A&C but in close collaboration with other researchers from the EU strategic partners of the ERRIC project, including short research visits to these universities.

The duration of the posts is 24 months, starting the 1st of September 2011 (or later). During this period the researcher will be employed by University Politehnica of Bucharest under a full-time fixed-term contract with full social security coverage.

Mission

In the frame of the ERRIC project, the experienced researcher will perform research in the field of human-robot (HR) skills emulation: learning from visual modelling and interpretation of gestures; cognitive learning for dexterous task reproducing; surface generation through procedural motion planning and local tool shape operators. In this respect, the experienced researcher will be deeply involved in design and implementing activities, and should develop new methods, algorithms and programs for: learning by showing, vision-based gesture modelling and mapping into motion patterns, 3D-surface generation from depth map part and tool description. He should also develop new software applications and integrate them to existing ones. Together with the SORM team, he should publish research results in scientific journals.

Principal activities

Studies, development and deployment of intelligent robot applications for human skills emulation

- Take initiative and develop software for visual gesture modelling, mapping to robot motion patterns, surface generation with visual tool compensation
- Manage the deployment of specific IIT solutions
- Provide knowledge and know-how transfer (participate in the training of Ph.D. students)

- Share and valorise the approaches, methods and tools developed
- Contribute to the creation of an international working environment for the SORM team
- Enhance the efficiency, proficiency, and visibility of R&D results and capacity of innovation of the SORM team at EU level
- Edit the scientific description of the developments and publish in journals and conference proceedings, including the annual ERRIC Workshops

Competences

- Skills in programming languages : C, C++
- Knowledge in advanced robot motion control: procedural motion, multitasking, vision guidance, redundancy management
- Knowledge in robot programming methods and structured robot languages
- Experience in image processing & robot-vision operating and application development
- IT architecting skills
- Team work and communication abilities
- Adaptability to technical evolutions
- Openness to innovative application of research in human-robot interaction: skills and dexterous tasks emulation, orthopaedic manufacturer, etc.

Qualification and experience

Applicants should:

- already be in possession of a doctoral degree in Computer Science or a closely related area and in a subject relevant to the post, with at least one year of postdoctoral experience
- have an outstanding research record in their field
- show excellent capacity for independent research
- be highly motivated and proactive
- have excellent team working skills
- have excellent communication skills (written and verbal) and scientific report writing skills
- be eager to disseminate research results by preparing journal articles and conference papers
- have the potential to develop fund raising research proposals

Experience with EU-funded research project implementation and grant application preparation is an advantage. Fluency in English is a prerequisite.

A competitive salary is offered, depending on experience and achievements.

Post location

University Politehnica of Bucharest, Faculty of Automatic Control and Computers

Faculty of Automatic Control and Computers

313, Spl. Independentei, sector 6, RO-060042, Bucharest, Romania

Closing date for applications

31 May 2011.

Informal enquiries

Informal enquiries about this post may be directed to Prof. Theodor Borangiu, Tel. +40 21 4029 314, Fax +40 21 3170 912, E-mail: theodor.borangiu@cimr.pub.ro or Prof. Radu Dobrescu, Tel. +40 21 4029 105, Fax: +40 317 09 12, E-mail: radud@isis.pub.ro

Application submission

Your application must include a full academic CV (including publication record), a statement outlining the research you envisage during your appointment and two letters of recommendation.

Applications should be submitted online at www.erric.eu/researchjobs. After the submission, applicants are requested to also send a notification to info@erric.eu. The letters of recommendation should be sent directly by the persons recommending the applicant to the address info@erric.eu.

Following the closing date, you will be informed by email whether or not you have been selected to be invited to participate in the next stage of the selection process. It may take up to two weeks following the closing date before we will be able to contact you.

At the University Politehnica of Bucharest we promote equality and value.