IEEE Graduate Fellowship award to IT researcher

Alírio Boaventura, researcher from IT and PHD student at Universidade de Aveiro under the supervision of Nuno Borges de Carvalho, received an IEEE MTT-S Graduate Fellowship for 2013 in the amount of $7000 USD in the category of radiofrequency and micro-waves (Microwave Theory and Techniques Society - MTT-S).

The MTT-S Society awards yearly up to 10 Fellowship to acknowledge and finance prominent PHD programs in the areas of radiofrequency and micro-waves. Alírio Boaventura is the first student in Portugal to receive this award.

The work he presented, “Remote Control Without Batteries” comes out of the research developed for his PHD thesis “Wireless Power Transmission Solutions for Wireless Communications”. The aim of the thesis is not only developing the concept of wireless energy transmission at microwaves, but also optimizing energy transmission efficiency and demonstrating applications for the real world. The remote control requires so little power to operate, that energy can be delivered wirelessly by an external source. In this way batteries are no longer required.

«This Fellowship now granted by IEEE MTT-S is somehow a result of the work we have been developing in the area of wireless power transmission. It means a very positive feedback and an extra motivation for the continuity of the project», he says.

URL: http://www.mtt.org/

Editorial

This time I decided to share with you an open letter that I intend to address to the Minister of Finance of Portugal.

Dear Sir,

I know that you have a challenging job and a deep concern to balance the state budget. So, rest assured, I am not asking you for more money. Like most Portuguese scientists, I am used to live and work with little money.

What I really need, to make the best possible use of the little money I get, is freedom to manage it. Freedom from the foolish laws, i.e. the Public Procurement Code, that, on one hand, restrict the use of available funds and, on the other hand, increase expenditure, since all bureaucracy has costs.

Obviously freedom does not mean improper use of public money. On the contrary. Use of public money should always be thoroughly scrutinized.

This is, my dear Minister a small contribution to your gigantic task. But as you know, small changes make big differences.

Carlos Salema

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Start-up co-founded by researchers from IT
VENIAM wins the 3rd Building Global Innovators Venture Competition

VENIAM is a start-up company in the area of vehicular networks co-founded by João Barros, Susana Sargento and André Cardote, researchers from IT at Porto and Aveiro.

Now the company will benefit from an extra financial support of 100,000 € in addition to the previous award received last November, when it was selected as one of the four finalists at “Sustainable Energy & Transportation Systems” track.


PROJECT SNAPSHOT
KeMANDE - KERNEL METHOD APPLIED TO NON DESTRUCTIVE EVALUATION

Throughout the world, engineers and technicians are working together on the detection of cracks and other anomalies to prevent expensive failures. The increasingly important role of nondestructive testing in public security and safety technology, drives the development of new and innovative methods as well as enhancements to already known methods. Eddy Current Testing (ECT) is one of the most established nondestructive structure evaluation techniques that enables defect detection and material condition monitoring with high sensitivity and reliability: the volume distribution of the material conductivity is determined by inducing Eddy currents inside the conductor under test and by measuring the magnetic field produced by those currents. ECT is used with electrically conductive materials for measuring the thickness of metallic plates, non-metallic coatings or metal substrates, estimation of electrical conductivity or magnetic permeability distribution, corrosion detection and determination of surface or subsurface defects. However, material defects are still the main source of concern regarding safety and economic efficiency.

Implement new and better measurements with both novel instrumentation and embedded artificial intelligence to automate the interpretation of the various imaging data streams in order to determine surface and subsurface defects shape and size.

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PAIRUE: design of a biometric identification system for uncontrolled data acquisition scenarios

Biometric recognition with controlled data acquisition is a mature technology. However, in this type of traditional biometric applications, a number of constraints are imposed on the subjects’ participation, which may cause some discomfort and may reduce the user’s acceptance. Users need to take deliberate actions to cooperate with the biometric systems, such as facing forward and standing still.

IT researchers from ISCTE-IUL, IST and UBI, are working on solutions to avoid these drawbacks, allowing biometric recognition in more uncontrolled scenarios. In particular, the objective of the PAIRUE project — fusion of Person Activity (gait) and Iris Recognition in Uncontrolled Environments — is to design and implement a biometric recognition system based on the way people walk and on eye images captured at a distance. Identification performance is thus increased by using more than one biometric trait.

With this system, persons will be recognized while walking along a corridor without being asked to change their behavior in any way. The acquisition system must be able to perform a much more sophisticated segmentation to extract the desired biometric information from the raw image/video and guarantee that it is not confused with noise, which can be quite high. The added difficulty with uncontrolled biometric data capture is that it can have different size, orientation, degree of deformation and type of illumination, all of which have to accounted for to enable successful user recognition.

Examples of video frames (RGB and depth frames) captured with the proposed system.