

## POST-DOCTORAL POSITION AT UBIKWA SYSTEMS

### Computer Vision Senior Researcher

#### TECNIOspring PLUS Program 2017

#### TECNIOSPRING PLUS

TECNIOspring PLUS (<http://www.tecniospring.eu>) is a **2 years fellowship program** for individual mobility proposals presented by experienced researchers in liaison with a company based in Catalonia (Spain) with the aim of developing applied research projects.

#### Timetable:

- Call opening: June 2017
- Call deadline: July 2017
- Evaluation process: July 2017 to November 2017
- Start of fellowships: December 2017

#### UBIKWA

We are a tech-based award-winning<sup>1</sup> startup located on the Scientific and Technological Park of the University of Girona (Spain). We have developed a disruptive **Smart Volumetric Camera** that allows the remote monitoring of bulk solids stored in bins and silos with great precision and at a very low cost. We have also built around this core technology our flagship product **INSYLO** ([www.insylo.com](http://www.insylo.com)), an IoT Supply Chain solution for livestock farmers and feed manufacturers that solves the problem of deciding the right moment and the right quantity to restock each silo. Our mission is to leverage the potential of our innovation to solve the logistic problem faced by several industries that needs to manage bulk solids inventories and contribute to a more efficient and sustainable economy.

Currently, we are seeking new talent to join our team and help us to execute an ambitious R&D plan to improve our products and open new interesting applications and markets.

#### THE CHALLENGE

Until now, the control of bulk solids stocks (floury, pellets, etc.) stored in silos and bins has been mainly done using load cells or strain gauges to measure the weight. These sensors are quite accurate but their high cost and the difficulty of installation prevents their use in a lot of cases. A more affordable alternative has also been the use of level sensors (ultrasound, radar, laser, etc.) but the uneven surface of bulk solids makes these sensor very inaccurate for this use case.

Ubikwa have developed a new proprietary concept, the Smart Volumetric Sensor, consisting in a

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<sup>1</sup> 1st IoT Global Call 2015 (Telefonica Open Future & China Unicom), CommBeBiz Awards 2015 (European Business Network), Smart Agri-Food High Flyers (European Commission).

3D sensor with embedded computer vision algorithms to measure the volume of the silo's content with great accuracy. Now we want to extend the capabilities of our sensor with new exciting functionalities that will bring the technology to a new level of usability and open the door to new applications and markets.

During the project, the researcher will use our camera to obtain depthmaps of the interior of the silo and explore different algorithms to uncover the full potential of the technology and develop advanced functionalities boosting our competitive advantage. Algorithms will have to be implemented and optimized for the camera's current microcontroller or ported to a DSP/FPGA if needed. The researcher will also contribute to the optimisation of the camera calibration procedure to improve efficiency and accuracy.

We also expect the researcher to contribute to the exploration of additional research lines such as multi-spectral analysis and/or alternative 3D measuring techniques.

## LEVEL OF EXPERIENCE

In order to be eligible for the TECNIOspring program, the researcher must:

- Hold a doctoral degree and four additional years of full-time research experience after obtaining it; or have at least eight years of full-time equivalent research experience, including the period of research training, after obtaining the degree which would formally entitle them to embark on a doctorate;
- Have at least one year of experience in applied research and/or technology transfer activities (R&D projects involving companies, patents licensing or spin offs);
- Have experience in the management of research groups.

## MOBILITY CONDITIONS

The researcher must not have resided or carried out her/his main activity (work, studies) in Spain for more than 12 months in the 3 years immediately prior to the deadline for the submission of applications (July 2017).

## CONTRIBUTION

Fellowship contribution is of **€ 58.500** per researcher per year during 2 years. Furthermore, up to €960 per year per researcher will be granted as mobility/travel allowance costs, plus 8.640 € x year as research costs.

## DETAILS:

Job Ref: TECSP17

Location: The Science and Technology Park at the University of Girona (Spain)

How to apply: Send your candidature to [draba@ubikwa.com](mailto:draba@ubikwa.com) including a motivation letter and a CV.