UNIVERSIDAD COMPLUTENSE MADRID

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Associate Professor since 2007 at the Facultad de Informática a the Universidad Complutense de Madrid with 20 years of research and teaching experience in the Department of Computer Architecture. Currently, my research within the ABSys group focuses on the design of adaptive hardware for applications in biomedical engineering that implement artificial intelligence and evolutionary computing techniques. Specifically, on the one hand, the design of digital circuits, and, on the other, the application of artificial intelligence techniques to the prediction of future values of blood glucose in people with diabetes.

I have 29 publications (23 JCR) and 66 in international (55) and national (11) conferences with 343 citations. I have supervised three doctoral theses, all focused on designing adaptive GALS and asynchronous processors. I am co-director of three ongoing doctoral theses with the following topics: 1/ Design of artificial intelligence systems on FPGAs for biomedical applications; 2/ Study and application of AI-specialized hardware to accelerate the training of massive neural networks in biomedical applications; and 3/ Application of machine learning techniques for the insurance sector.

I have two national patents for a method for estimating blood glucose levels, hold five awards (UCM-Fundación Instituto Roche 2020, PDP 2008, DATE 2001, SiPS 2001, and CACSD 2001). I have been the promoter of the International Workshop Parallel Architectures and Bioinspired Algorithms in 2008 in Canada, 2009 in the USA and 2010 in Austria. I have participated in nine competitive research projects (one MEC Consolider– Ingenio, six CICYT, one of the Community of Madrid, one of the Universidad Complutense de Madrid), and I have been the PI of a privately funded research project. In addition, I have participated in three projects of the Program for the Creation and Consolidation of Research Groups of the Universidad Complutense de Madrid - Community of Madrid. I have also participated in nine knowledge transfer projects, being the principal investigator (PI) in six of them. The nine have been carried out under cover of Art. 83 of the LOU. Of these projects, two have been carried out with the company INDRA to design the communications modem of an unmanned aerial vehicle (UAV); five (PI) with the company CRISA designing the verification environments for various subsystems of the SEOSAT / Ingenio satellites; and one (PI) with the company Investing Profit Wisely, S.L., to advise on integrated circuit design methodologies.

Until 2014, I was working in the ArTeCS group of the Universidad Complutense de Madrid, researching adaptive processors' design. Previously, I worked as an ASIC design engineer for Lucent Technologies Bell Lab Innovations, Agere Systems and LSI companies to develop chips in communication applications in technologies from 130nm to 65nm.