

El Instituto de Ingeniería Eléctrica de la Facultad de Ingeniería de la Universidad de la República, con el apoyo del Capítulo Uruguay de la IEEE Circuits & Systems Society invitan a la siguiente conferencia:

Challenges for embedded systems development: Can we have it all?

Prof. Luigi Carro (UFRGS)

Jueves 25 de Abril – 18:00 hs. Salón Gris

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Abstract:

In this talk we discuss the current design challenges for embedded systems, suffering pressures from the market, technology and software development. After discussing the context, we introduce some first steps in the direction of having software productivity with high reliability and low energy dissipation. We present RA3, the Resilient Adaptive Algebraic Architecture, which is capable of adapting parallelism exploitation in a time-deterministic fashion to reduce power consumption, while meeting the existing real-time deadlines. Furthermore, the architecture provides low overhead error correction capabilities, through the use of algebraic properties of the operations it performs. We use two real-time industrial case studies to validate the architecture and to show how the adaptive exploitation works. Finally, we present the results of fault-injection campaigns to show the architecture resilience against soft-errors.

About Luigi Carro

Luigi Carro received the B.Sc. in Electrical Engineering (1985), M.Sc. in Computer Science (1989) and Ph.D. (1996) from the Universidade Federal do Rio Grande do Sul (UFRGS). Currently he is Full Professor in the Instituto de Informática da Universidade Federal do Rio Grande do Sul. He has experience in the field of Electrical Engineering and Computer Science, working primarily in Hardware & Software for embedded systems. His main interest includes: system prototyping, embedded electronic systems, application specific processor architectures, embedded system testing and fault tolerant circuits. In 2007 he received the prize FAPERGS - Researcher of the year in Computer Science.



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