

Discrete-Event Modeling and Simulation for Development of Embedded and Real-Time Systems

Gabriel Wainer
Carleton University

Facultad de Informática

On-line <https://meet.google.com/hse-unrc-qsu>
viernes 22 de octubre de 2021 - 17:00

Resumen:

Embedded real-time software construction has usually posed interesting challenges due to the complexity of the tasks these systems have to execute. Most methods for developing these systems are either hard to scale up for large systems, or require a difficult testing effort with no guarantee for bug-free software products. Construction of system models and their analysis through simulation reduces both end costs and risks, while enhancing system capabilities and improving the quality of the final products. This is a useful approach, moreover considering that testing under actual operating conditions may be impractical and in some cases impossible. In this talk, we will present a Modeling and Simulation-based framework to develop embedded systems based on the DEVS (Discrete Event systems Specification) formalism. This approach combines the advantages of a simulation-based approach with the rigor of a formal methodology. We will discuss how to use this framework to incrementally develop embedded applications, and to integrate simulation models with hardware components seamlessly.

Sobre Gabriel Wainer:

Gabriel Wainer es Full Professor de la Universidad de Carleton (Ottawa, Canadá). Es autor de cuatro libros relacionados con simulación y sistemas de tiempo real, y de más de 400 artículos en distintas revistas y congresos, con varios premios al mejor artículo. Es editor y jefe de la revista SIMULATION: Transactions of the SCS, y editor asociado de varias revistas de prestigio. Es el investigador principal del laboratorio Advanced Real-Time Simulation. Ha sido investigador principal de más de 20 proyectos de financiación pública y privada. Ha supervisado más de 10 investigadores posdoctorales, más de 20 estudiantes de doctorado, más de 10 asistentes de investigación y más de 200 proyectos de máster y fin de carrera. Ha sido Vice-Presidente de Conferencias, Vice-Presidente de Publicaciones y actualmente es miembro del Panel del Directores de la Society for Computer Simulation International (SCS). Es Fellow Member de SCS. Ha recibido numerosos premios y galardones, como el IBM Eclipse Innovation Award, Leadership award (SCS), Bernard P. Zeigler DEVS Modeling and Simulation Award, SCS Outstanding Professional Award, o la Nepean's Canada 150 Anniversary Medal.