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THE CONCORDIA INSTITUTE FOR INFORMATION SYSTEMS ENGINEERING
IS PLEASED TO PRESENT THE FOLLOWING GUEST LECTURE IN OUR CIISE DISTINGUISHED SEMINAR SERIES

Dr. Charles Consel, Professor

INRIA / University of Bordeaux

A DSL-Based Approach to Developing Pervasive Computing Applications

Developing pervasive computing applications is a difficult task because it requires to deal with a wide range of issues: heterogeneous devices, entity distribution, entity coordination... Besides requiring various areas of expertise, programming such applications involves writing a lot of administrative code to glue technologies together and to interface with both hardware and software components.

This talk presents a generative programming approach to providing programming, execution and simulation support dedicated to the pervasive computing domain. This approach relies on a domain-specific language, named Diaspec, dedicated to the description of pervasive computing systems. Our generative approach factors out features of distributed systems technologies, making Diaspec-specified software systems portable.

The Diaspec compiler is implemented and has been used to generate dedicated programming frameworks for a variety of pervasive computing applications, including detailed ones to manage the building of an engineering school.

This is joint work with Damien Cassou, Benjamin Bertran and Nicolas Loriant

Biography: Charles Consel is a professor of Computer Science at ENSEIRB/University of Bordeaux I. He served on the faculty of Yale University, Oregon Graduate Institute and the University of Rennes. He leads the Phoenix group at INRIA. He has been designing and implementing Domain-Specific Languages (DSLs) for a variety of areas including device drivers, programmable routers, stream processing, and telephony services. These DSLs have been validated with real-sized applications and showed measureable benefits compared to applications written in general-purpose languages. His research interests include programming languages, software engineering and operating systems.

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