"Producers/Consumers/Reducers: Design of a generic parallel pattern and concurrent code synthesis"

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Where: Jakob-Haringer-Str. 2, Room T03

When: Tuesday, September 24, 2013, 14:00 Uhr c.t.

The problem of synthesizing parallel code from a high level specification is a complex one. A known approach to simplify code generation consists of restricting allowed specifications to certain high level concurrency patterns.

In this talk we present the Producers/Consumers/Reducers (PCR) parallel pattern, describing its syntax and semantics in the general purpose formal concurrency model FXML. We show several known problems mapped into PCRs, including ones featuring composition of multiple pattern instances.

We provide C++ code synthesis for PCRs into the concurrent execution framework Habanero Concurrent Collections taking advantage of its parallelization features: transparent multithreading and distribution.

Gervasio is a PHD student at the Computer Science Department of the University of Buenos Aires. His main interests are parallel and distributed software construction and automatic code generation. He's a member of LaFHIS (the software engineering research group) and the mobile computing group. His thesis advisor is Sergio Yovine.
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