Geomatik - Kolloqium

Do. 16.05 ab 16:15 Uhr GFZ Haus H, Raum VR1

Prof. Dr.-Ing. Tiziana Margaria-Steffen, Anna-Lena Lamprecht
Scientific Workflows - dealing with a world full of services and their varying compositions

With the increasing dependency of everyday's life on computer-aided support, moving large portions of the needed application programming load from programming experts to application experts or even to end-users becomes a major challenge: In particular, typical daily adaptations and modifications should be in the hands of the application expert. We research concepts and technologies to make this happen, and apply them to create tools and frameworks that offer automated support to model-driven service orientation. Our colloquium talk presents our applications in science, focussing on geo- and bioinformatics.

Scientific application domains are characterized by the long-term availability of the basic computational components, but software systems for managing the actual workflows of the scientific day-to-day life have to deal with changing service interfaces and varying service compositions.

In this talk we describe how the extreme model-driven approach implemented in the jABC framework supports the agile management of processes and workflows in really huge and truly heterogeneous application domains. The key concept is the use of different levels of abstraction, which leverages workflow design to a more conceptual level, enabling scientists (our end-users) to work with a world-wide distributed collection of tools and data using their own domain language, that is, without requiring technical knowledge about IT and programming in general and about the used services in particular.

Tiziana Margaria-Steffen is Chair of Service and Software Engineering at the University of Potsdam. She has broad experience in the use of formal methods for high assurance systems, in particular concerning functional verification, reliability, and compliance of complex heterogeneous systems, through major industrial projects (where she won the European IT Award in 1996, and a start-up competition in 2001) and consulting, as well as through her activities as founder and CEO of startup companies. The industrial applications of the jABC framework, developed with her guidance, has proven the practicality of this holistic approach. She is among others VP of the European Association of Software Science and Technology (EASST), member of the FMICS Board, ETAPS SC, founding editor of STTT, the NASA ISSE, and IJCCBS, and ideator of the ISoLA conference series.

Anna-Lena Lamprecht is research assistant (PostDoc) at the Chair for Service and Software Engineering. She studied Applied Computer Science at the University of Göttingen from 2002 to 2007, and worked on her PhD on user-level design of bioinformatics workflows at the Chair for Programming Systems, TU Dortmund, from 2007 to 2012. She spent research stays at the Universities of Beijing and Sao Paulo and the Institut Pasteur in Paris. Her work has been presented at a number of conferences and peer-reviewed journals. She was invited to the 2011 BioHackathon in Tokyo and is one of the organizers of the scientific workflow track of the ISoLA symposium.

Next talk

23.05.2013	Stephan Gensch: Sensor-Integrationsplattform - Connector-Plugins und Mapping
16:15 Uhr	**Griebnitzsee Raum: 3.06.H01**

Veranstalter

Prof. Dr. Bettina Schnor, Institute of Computer Science, Universität Potsdam
Prof. Dr. Joachim Waechter, German Research Centre for Geosciences