

## **"Creating Better Information Systems with Process Mining"**

Wil van der Aalst (TUE)

Process mining addresses the problem that most organizations have very limited information about what is actually happening in their organization. In practice, there is often a significant gap between what is prescribed or supposed to happen, and what actually happens. As a result, information systems are not fitting or ignorant of the true processes taking place. Using process mining, it is possible to discover models that reflect what is really happening. This can be used to configure systems and to improve processes. Moreover, it is possible to measure conformance and to quantify alignment. An important enabler for process mining is the availability of event logs. In his presentation, prof. Van der Aalst will show a wide variety of real-life examples that illustrate the omnipresence of such data and the applicability of tools such as ProM.

## **"The State of Multi-Agent Programming"**

Rafael H. Bordini (Durham, UK)

This talk will give an overview of a particular approach to programming multi-agent systems (based on the agent platform called "Jason") and how formal verification of systems programmed according to that approach could be done. However, this will be done very briefly, simply as an attempt to situate a wider discussion of what the general state of languages and techniques for programming multi-agent systems currently is. The talk will then use this as a basis for discussing current shortfalls and future trends in multi-agent programming and verification of multi-agent programs.

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Dr. Rafael H. Bordini is Lecturer in Computer Science at the University of Durham, UK. He received a PhD from the University of London (UCL) in 1999, and worked as a visiting lecturer at UFRGS (Porto Alegre, Brazil), then as a research fellow at the University of Liverpool, before joining the University of Durham. Dr. Bordini has published over 60 peer-reviewed papers in journals and conferences and is best known for his work on agent-oriented programming languages, as well as his work on model checking multi-agent systems. For further details, visit <http://www.dur.ac.uk/r.bordini>.

## **"Bayesian machine learning: theory and applications"**

Tom Heskes (RUN)

Machine learning is about learning models from data. In so-called Bayesian machine learning we build probabilistic models and use probability calculus, in particular Bayes' rule, to infer the unknown model parameters given the observed data. In my presentation I will show where this leads to by highlighting some of the applications that we work on: brain-computer interfacing (how to control devices by reading out brain activity), functional genomics (how to use functional and structural data to unravel the life cycle of the malaria parasite), and personalization of hearing aids (how to design listening experiments that reveal the preferences of individual users).

## **"Retrieving Entities"**

Maarten de Rijke (UVA)

Now that document retrieval has become somewhat of a commodity, the information retrieval community is increasingly considering tasks that revolve around entities rather than documents. Examples include product search, finding answers or locations, and profiling people or organisations. In this talk I will review some recent work on entity retrieval at the University of Amsterdam. Important building blocks for this work include named entity normalization and association finding. And prominent applications that will be discussed include expert finding and online media analysis.

The talk is based on joint work with Sisay Fissaha Adafre, Leif Azzopardi, Krisztian Balog, Maarten Marx, Valentin Jijkoun, Mahboob Khalid, and Wouter Weerkamp.