INFORMATICS COLLOQUIUM

Speaker:

Dr. Pierre Geneves, CNRS, France

Queries for trees and graphs: static analysis and code synthesis

Abstract:
The increasing availability of richly structured data in large volumes raises a number of questions and challenges. In particular, the interest in querying massive datasets raises challenges on how data and query computations should be distributed to achieve better performance and scalability. This leads to a renewed interest in the static analysis of queries. Static analysis involves solving fundamental problems at compile-time such as query satisfiability, query containment and equivalence. Major applications include: early detection of errors, redundancy elimination, faster access control with costs deferred at compile-time, query optimisation.

In this talk I will review advanced static analysis techniques for regular path queries over trees. I will also summarize the limits and what can be achieved with graph queries. I will then give an overview of our on-going work on code synthesis for graph queries, drawing some perspectives for further developments in the field.

Bio:
Pierre Genevès is research scientist at CNRS, co-leader of the Tyrex research team at LIG and Inria in Grenoble. His research interests revolve around data-centric programming, logic, static typing, which include aspects relevant to programming languages, artificial intelligence and the web, and in particular query and transformation languages for trees and graphs. He currently coordinates the CLEAR research project, which aims at investigating ways to generate code optimized for massive datasets. His previous affiliations as a researcher include EPFL and IBM Watson. Pierre has also had active roles in several startups. His scientific contributions were awarded several prizes from IBM, EADS and CNRS.

Date and time: *Tuesday March 27th, 2018, 4.15 pm*
Location: *Pérolles 21, room E120, Bd de Pérolles 90, Fribourg*
Contact person: *Prof. Philippe Cudré-Mauroux*

The colloquium is free and open to the public.