INFORMATICS COLLOQUIUM

Speaker:

Dr. Onur Kocberber, Oracle Labs, Zurich

Automating Cloud Databases with Interpretable Machine Learning

Abstract:
Database management system (DBMS) automation is an indispensable component of practical and performant databases systems. Over the last several decades, academia and industry built a myriad of DBMS automation tools to assist database administrators. Despite significant progress, the advent of cloud computing turned the automation problem into a constant battle of modeling ever-changing cloud hardware and software while meeting the customer/workload needs.

In the first part of this talk, we give an overview of MySQL HeatWave, which is an Oracle Cloud service that combines MySQL, the industry-proven and world's most popular open-source database, with a massively parallel, in-memory query engine, HeatWave, that can execute queries over large scale data by speed-ups ranging from 100x to 1000x compared to native MySQL.
In the second part of the talk, we discuss MySQL Autopilot, which integrates a diverse set of ML-based automation capabilities into MySQL HeatWave. These ML-based capabilities are designed to simplify management and automatically adjust performance/cost based on workloads. We demonstrate various MySQL Autopilot use cases and conclude the talk with research agenda and open problems.

Bio:
Dr. Onur Kocberber currently works in MySQL HeatWave product team (formerly part of Oracle Labs) on cutting-edge research and advanced development projects that focus on improving cloud database performance, efficiency, and automation via applied & interpretable machine learning techniques.
Prior to joining Oracle Labs, he received his Ph.D. in Computer Science from École Polytechnique Fédérale de Lausanne (EPFL). At EPFL he worked on hardware and software accelerators for data analytics on modern hardware. He was also one of the architects of CloudSuite, a scale-out cloud service benchmark suite that is widely adopted by industry and academia today. He is a recipient of several paper awards as well as Google Ph.D. fellowship in computer systems in 2014.

Date and time:	*Wednesday December 15th, 2021, 04.15 pm*
Location :	*Pérolles 21, room G120, Bd de Pérolles 90, Fribourg*
Contact person:	*Prof. Philippe Cudré-Mauroux*
COVID-19:	***COVID certificate mandatory***

The colloquium is free and open to the public.