



# INFORMATICS COLLOQUIUM

**Speaker:**

**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 Analytics Service, which is an Oracle Cloud service that combines the industry-proven and world's most popular MySQL database with a massively parallel, in-memory rapid engine that can execute queries over large scale data by speed ups ranging from 100x to 1000x compare to native MySQL. In the second part of the talk, we discuss the MySQL Cloud and MySQL Analytics Service automation research agenda, current progress, and open problems. The Analytics service is designed for employing Auto Machine Learning (ML) capabilities. These ML-based capabilities are designed to simplify management, and automatically adjust performance/cost based on workloads. We conclude the talk with one example of such feature, Auto Provisioning, which provides users recommendation on how many Analytics servers are needed to run a given workload.

**Bio:**

Onur Kocberber currently works at Oracle Labs, Zurich 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:* Tuesday March 17<sup>th</sup>, 2020, 04.00 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.*