Title

A Sneak Peek in Oracle Labs Zurich: Data Science with Notebooks, Graphs Machine Learning, and Polyglot Virtual Machines

Abstract

In this presentation, we will share a sneak peek in three of our projects in Oracle Labs Zurich. We will start by presenting some logistics about Oracle Labs and particularly about internships with our teams. We will then have three mini in-depths on the following projects:

1. Oracle Labs Data Studio - Packaging Oracle (Labs) Technologies into an Enterprise-Ready Notebook Platform;
2. Graph Machine Learning and its Applications; and
3. GraalVM and the Quest For High-Performance Polyglot Virtual Machines

We have included below more information about these projects, in case you are curious to read more in advance.

Oracle Labs Data Studio - Packaging Oracle (Labs) Technologies into an Enterprise-Ready Notebook Platform

Presenter: Alexandra Fritzen (alexandra.fritzen@oracle.com)
Bio:

Alexandra received her Master's degree in Information Systems from the Technische Universität München in 2019. During her studies, she joined Oracle Labs in Zurich as a project management intern in 2018 and is now the research manager of Oracle Labs Data Studio, a web-based notebook platform for Oracle's enterprise customers.

Abstract:

Oracle Labs Data Studio is a web-based notebook platform for data scientists that combines live code collaboration in multiple programming languages with graph analytics and rich, interactive visualizations. The focus in Data Studio lies on enterprise software, meaning scalability, high availability, multi-tenancy, an Oracle look & feel, and more. Data Studio is being developed by Oracle Labs in Zurich and other locations around the globe. This talk will introduce Data Studio as a whole, go into some of our current challenges and showcase some use cases from the financial and health science sectors.

Graph Machine Learning and its Applications

Presenter: Rhicheek Patra (rhicheek.patra@oracle.com)
Bio:

Rhicheek Patra is a Research Manager at Oracle Labs and is interested in research & development involving machine learning (including graph learning), cybersecurity, and recommender systems. During his Ph.D. at EPFL, his research work led to publications in many premier conferences like VLDB, ICDE, ICML and others. While he likes to continue his research in the above-mentioned topics, he also likes to put them into practice.

Abstract:

Graphs and ML together can enable new insights that could not be attained previously. Graph models and machine learning techniques are becoming popular for discovering relationships, classifying information, identifying patterns and anomalies in data, and improving understanding of the information. Recently, there have been a lot of research work to design efficient Graph

Convolutional Networks (GCNs) which enables learning on Graph data model. In this talk, we will briefly go over how graph learning applies to different applications like cybersecurity or healthcare.

GraalVM and the Quest For High-Performance Polyglot Virtual Machines

Presenter: Oleg Selaje (oleg.selajev@oracle.com)

Bio:

Oleg Selajev is a developer advocate at Oracle Labs working on GraalVM the high-performance embeddable polyglot virtual machine. He organizes VirtualJUG, the online Java User Group, and a GDG chapter in Tartu, Estonia. In 2017 became a Java Champion. You can find Oleg on Twitter: @shelajev.

Abstract:

GraalVM is a universal virtual machine, developed at Oracle Labs, that can run programs written in JavaScript, Python, Ruby, R, JVM-based languages such as Scala, Java and Kotlin, and LLVM-based languages such as C, C++ and Rust. One of GraalVM's main benefits is that it removes the isolation between programming languages and allows them to interoperate in a shared runtime. Another benefit is that it allows efficient ahead-of-time compilation, which improves the application startup time, and allows running the application without a pre-installed JDK. GraalVM can be used standalone, or embedded into other runtimes, such as Node.js. For each of the components of the GraalVM stack, we'll show some challenges we face, our ongoing projects, as well as our future directions and opportunities.