LAMBDA: Learning, Applying, Multiplying Big Data Analytics

Valentina Janev[3], Jens Lehmann[1,2], Emanuel Sallinger[4], Sahar Vahdati[1], Damien Graux[1,2], and Hajira Jabeen[1]

[1] Smart Data Analytics (SDA), University of Bonn, Germany
{lehmann,Vahdati, Jabeen}@cs.uni-bonn.de
[2] Fraunhofer IAIS, Germany
[3] Mihajlo Pupin Institute
[4] University of Oxford
emanuel.sallinger@cs.ox.ac.uk

1 Project Description

In recent years, Open Data and Big Data technologies have attracted the attention of research communities as well as software providers and policy and decision makers. There are several motivations by different stakeholders for this movement, such as: i) corporations and companies require the technologies for processing large-scale enterprise data streams in near real time, ii) researchers and developers use such technologies for training their proposed approaches and algorithms. Despite the rapid movement of Big Data in the EU, there are still scientific and industry gaps in some regions especially in South-East Europe. In order to provide support, a scientific strategy is proposed to provide the foundation for Learning, Applying, Multiplying Big Data Analytics (LAMBDA) in this area of Europe. The aim is stepping up and stimulating scientific excellence and innovation capacity, increasing research capacities and unlocking the research potential of the "Mihajlo Pupin" institute as the biggest and the oldest research and development institute in the ICT area in the whole West Balkan region. A comprehensive series of material including theory and practice of recent concepts and technologies about Big Data will be produced in the form of Open Course Ware (OCW). In addition, the ultimate goal is to turn the "Mihajlo Pupin" institute into a regional point of reference when it comes to multidisciplinary ICT competence of Big Data analytics.

The vision of LAMBDA is to strengthen the Human capital and Education, Research and Development capacities of "Mihajlo Pupin" Institute, the leading Serbian research and development institution in information and communication technologies in order to serve as a Big Data and Analytics HUB that connects and integrates scientists and professionals from the West Balkans and the entire region into the European Research Area. In addition, the contributions will be decreasing the existing European regional research and innovation disparity by fostering excellence in the Big Data ecosystem areas. This vision includes unlocking and raising the scientific profile of academics institutions from West Balkan region while contributing to European progress beyond the state-of-the-art of related research and technology, as well as establishing productive and fruitful long-term cooperation.

2   Research and Development Activities

The LAMBDA project consists of the balanced combination of activities specific for a coordination and support action. The main partners are the Puppin Institute from Belgrade Serbia, Fraunhofer IAIS, University of Bonn both from Germany and University of Oxford, Uk. Activities aim at reinforcing researchers from Serbia and the Region in most promising ICT areas (Big Data management, semantic technologies, advanced database technologies and NoSQL stores, etc), and establishing productive and fruitful cooperation of research and development and innovation organizations from the region with other relevant EU research institutions. The project will be well publicized and promoted during the course of the project using both conventional and innovative dissemination instruments. The activities can be Listed as:

- establishing a Knowledge repository (Learning and Consulting Platform) that will facilitate Spreading Excellence and Exchange of learning materials and best practice between the international leading organizations and research institutions and Industry from the West Balkan countries;
- organization of international events (trainings, workshops, webinars) about future trends in Big Data, Semantic Technologies and applications in industry;
- forecasting exercises about future trends of data services in Europe.

The theory and practice of the covered concepts will be trained in details based on VADALOGA [1] system developed by Oxford university and SANSA [2] stack developed by Bonn university.

3   Networking Outline

The LAMBDA team plans to demonstrate a comprehensive list of topics, tools and frameworks that are required foundations for every active agent or individual in the context of Big Data. There will be an interactive part of this demonstration for introducing syllabus of considered topics and frameworks for the audience in order to brainstorm with other community members. LAMBDA is planned to be connected to other relevant projects in order to include their description and in-use technologies in the OCW teaching material. The networking session brings an opportunity to have invitation for keynote speakers and attract a broad range of candidate participants for LAMBDA events such as the Big Data Analytics school of LAMBDA in 2020. It can be an inspiration and motivation for similar projects for different regions of the EU.

References

1. Bellomarini, L., Sallinger, E., Gottlob, G. The Vadalog system: Datalog-based reasoning for knowledge graphs. In: Proceedings of the VLDB Endowment 11(9) (2018), pp. 975–987.
2. Lehmann, J., Sejdiu, G., Bühmann, L., Westphal, P., Stadler, C., Ermilov, I., Bin, S., Chakraborty, N., Saleem, M., Ngomo, A.-C. N. et al. Distributed semantic analytics using the sansa stack. In: Springer. 2017, pp. 147–155.