

## FLASH REPORT

### Event name

**Thematic workshop: “Big Data for Labour Market Information – focus on data from online job vacancies – training workshop” (Eastern Partnership Platform 4 Work Programme for members of the “Make it Match” experts’ network), 21-22 November 2019 - Milan, Italy**

### Main objective/s

The goal of this thematic workshop is to introduce and enhance the understanding, awareness and use of Big Data and Artificial Intelligence Algorithms for deriving knowledge about the Online Labour Market (aka, Labour Market Intelligence). The workshop was structured as a two-day training organised as follows:

**Day 1** was devoted to the understanding of what Big Data is and how it is related to AI, by introducing the meaning of supervised and unsupervised algorithms for text classification. Next sessions discussed the issues related to the use and implementation of AI pipelines and frameworks for dealing with Online Job Vacancies (OJV) in terms of methodologies and challenges. The former - framed within the KDD context - was discussed step-by-step with participants to go more in depth on the issues and concerns related to data collection and preparation, data cleaning and transformation, and data classification steps, too. Finally, the effective usefulness of retrieving LMI knowledge was discussed in the last session, dealing with the concerns related to the representativeness and significance as well. A discussion between attendees clarified and detailed the state of play of LMI in each participant Country.

Learning goals reached after Day 1:

1. What is AI (supervised vs unsupervised algorithms);
2. What is Big Data and how it is related to AI (the fuel of AI);
3. How to process OJVs (steps built on top of KDD);
4. How to deal with data cleaning on OJV;
5. What classifying OJV means (algorithms, challenges, issues, pros, cons)

**Day 2** was devoted to the understanding of critical aspects of a LMI architecture that works on OJV across countries. Specifically, the sessions addressed the problem of understanding what architecture (if any) should be used to build a real-time classification system according to stakeholders’ needs and ability in understanding the data (cloud vs local; costs and risks; knowledge entry points; expertise needed). A working examples and applications session highlighted the pros and cons of each solution might be adopted within different country members. During this day, multiple discussions and round tables between participants and moderators/instructors took place to (i) better focus on the issues that each local labour market has (e.g., number and representativeness of local Online labour market; previous attempts to collect OJVs; etc.); (ii) identify and write-up steps, critical aspects, and requirements that a real-time OJV system would address in each Country.

Learning goals reached after Day 2:

1. How a real-time LMI architecture should look like;
2. Pros/cons cloud computing for realising a real-time LMI system;
3. Overview and understanding of characteristics of local Online labour markets of each Country member that joined the workshop;
4. What visualising LMI knowledge means in terms of dimensions (territory, sector, skill, and occupation)
5. Steps and guidelines for realising a real-time LMI system in each Country.

## Background

Under the framework of Eastern Partnership (EaP) multilateral cooperation, notably Platform 4 (People to People), the European Commission and the European Training Foundation (ETF) co-organise a training workshop on 21-22 November 2019, in partnership with the University Milano-Bicocca and TabulaeX.

University Milano-Bicocca carries out applied research on innovative methods for skills analysis using Big Data and cooperates with ETF in this domain. All learning materials were prepared by the instructors Mr. Fabio Mercurio (University of Milano-Bicocca) and Mr. Alessandro Vaccarino (TabulaeX srl).

## SHORT DESCRIPTION OF THE EVENT

Participants of the workshop are experts in the domain: labour market statistics, research in labour market and skills dynamics, data / computer science and management of online job vacancies. The workshop was attended by 27+ experts from Armenia, Azerbaijan, Belarus, Georgia, Moldova, Ukraine.

## KEY OUTCOMES/CONCLUSIONS

The proceedings of the workshop are published on the ETF website:

<https://www.etf.europa.eu/en/news-and-events/events/big-data-labour-market-information-focus-data-online-job-vacancies-training>

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