

Key Action: Learning Mobility of Individuals  
Action Type: Erasmus Mundus Joint Master Degrees

Project Title

# Big Data Management and Analytics

## Project Coordinator

**Organisation** UNIVERSITE LIBRE DE BRUXELLES  
**Address** AVENUE FRANKLIN ROOSEVELT 50 , 1050 BRUXELLES , Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest , BE  
**Website** [www.ulb.be](http://www.ulb.be)

## Project Information

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**Partners** CENTRALESUPELEC (FR) , TECHNISCHE UNIVERSITEIT EINDHOVEN (NL) , UNIVERSITAT POLITECNICA DE CATALUNYA (ES) , TECHNISCHE UNIVERSITAT BERLIN (DE) , UNIVERSITA DEGLI STUDI DI PADOVA (IT)

## Project Summary

Organisations in all sectors face an avalanche of digital data. However, data is of great value only after it has been refined and analysed, in order to produce knowledge for decision making. A data value creation chain encompasses multiple disciplines, of which Data Science and Big Data are two prominent examples. Data Science (DS) is the scientific field that uses scientific methods, processes, algorithms and systems to extract knowledge and insights from data in various forms, both structured and unstructured. Data scientists may often be faced with the challenges posed by the extreme characteristics of Big Data (BD), defined as data of a very large size, typically to the extent that its manipulation and management present significant logistical challenges. The EMJMD in "Big Data Management and Analytics" (BDMA) is designed to provide understanding, knowledge, and skills in the broad scope of fields underlying the data value creation chain. Its main objective is to train computer scientists who have an in-depth understanding of the stakes, challenges, and open issues of gathering and analysing large amounts of heterogeneous data for decision-making purposes. The programme will prepare the graduates to answer the professional challenges of our data-driven society through a strong connection with industry, but also to pursue their studies into doctorate programmes through a strong connection with research and innovation. The curriculum is jointly delivered by Université libre de Bruxelles (ULB), Belgium, Universitat Politècnica de Catalunya (UPC), Spain, Technische Universität Berlin (TUB), Germany, Technische Universiteit Eindhoven (TU/e), the Netherlands, and CentraleSupélec (CS), France. Academic and industrial partners, private R&D companies, excellence centres, service companies, start-up incubators, and public research institutes will contribute to the programme by giving lectures, training students, providing software, course material, and internships or job placements. BDMA is a 2-year (120 ECTS) programme. The first two semesters are devoted to fundamentals delivered by ULB and UPC. Then, all students participate to the European Big Data Management and Analytics Summer School (eBISS). In the third semester, students chose one of the three specialisations delivered by TUB, TU/e, and CS. The fourth semester is dedicated to the master's thesis and can be carried out as an internship in industry or in a research laboratory in any full or associated partner. Eventually, all students attend the Final Event devoted to master's theses defences and the graduation ceremony. The tuition language is English. The program targets students with a Bachelor of Science with major in Computer Science, as well as an English proficiency corresponding to level B2 of CEFR. The programme will deliver a joint degree to graduates following the CS or TU/e specialisations, and three degrees from ULB, UPC, and TUB to graduates following that mobilities.

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