14D999

Industrial Practicum

Prerequisites to Enroll

None

Industrial Practicum Overview

The Practicum is a data science project done in coordination with a company in order to gain experience with the skills and knowledge acquired in the first two terms of the master program.

By December, students will apply among a list of possible companies and projects, and a selection process involving the company will match students with practicums.

Students will analyze real data and a business case provided by one of the collaborating companies, so students and companies will be matched on a competitive basis.

Students will be asked to do a presentation by the end of June, in which they will describe their work at the company.

The Practicum will only be undertaken by a subset of the students.

Course Outline

Practicum project details based on short list offered by pre-selected companies.

Required Activities

300 hours of practicum, between April and June.

Evaluation

Feedback from the company.

Final Presentation.

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Industrial Practicum

Spring Term - 6 ECTS

Elective Course

Prof. Joan Verdú (Coordinator)

Competences

☐ Construct a global vision of the situation of the problem based on knowledge of the synergies between advanced statistical methods, computing and business analysis to generate added value.

☐ Modeling and predicting high-dimensional data with advanced statistical methods in the field of data science in order to improve strategic decision making.

☐ Apply the knowledge of programming languages, computer programs and advanced services in the Cloud to solve the problems that are presented to the data scientist.

☐ Solve the real problems that arise in the fields of study through the accurate analysis of the data.

☐ Visualize and interact with high-dimensional data in order to contextualize the information and facilitate subsequent decision-making.

☐ Communicate with conviction in English the results and implications of the required analytical study using a language related to the receiver.

☐ Make use of personal data knowing the limits of it, its legal consequences and the practical repercussions of it.

☐ Own and understand knowledge that provides a basis or opportunity to be original in the development and / or application of ideas, often in a research context.

☐ That students know how to apply the acquired knowledge and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their area of study.

☐ That the students be able to integrate knowledge and face the complexity of making judgments based on information that, being incomplete or limited, include reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments.

☐ That the students know to communicate their conclusions and the knowledge and last reasons that sustain them to specialized and non-specialized publics in a clear and unambiguous way.

☐ That students have the learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous.

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Learning Outcomes

☐ Apply mathematical and computational analysis of social, business and economic networks knowing the theory and optimization algorithms.

☐ Work with databases and cloud computing.

☐ Model Big Data information using data mining techniques.

☐ Visually display Big Data information using data mining techniques.

☐ Work with Big Data information using data mining techniques.

☐ Express in computer language the resolution of complex problems with high-dimensional data.

☐ Apply mathematical and statistical analysis using economic theory in complex problems with high-dimensional data.

☐ Create visualizations of information according to each type of data.

☐ Sort the information in a visual and understanding mode from the selection and qualification of the data.

☐ Treat high-dimensional data environments knowing their limitations and how to present the results.

☐ Present information visually and in an orderly manner to improve decision making.

☐ Answer the question "And then what do we do?" Based on the information obtained and presented.

☐ Collaborate in a computing environment that requires structuring and planning.

☐ Apply mathematical theory and statistics on data sets from disparate disciplines.

☐ Know the restrictions and considerations of the use of personal data in relation to the Organic Law of Data Protection.