

Master in Big Data Solutions

# SHAPE THE DIGITAL FUTURE



"My experience at BTS is happy, successful, and productive!"

**Polina Severina** Russia, BTS Student. Web Developer - Accenture



"Definitely recommended, the teachers are really qualified, the program is really solid"

Andrea Amorosi Italy, BTS Student. Functional & Industry Analytics Analyst - Accenture



"BTS has been enlightening. It has opened a whole new door for me"

**Franco Bonifetto** Argentina, BTS Student. Growth Hacking - Barcelona Tech



"A dynamic and hands-on Masters compared to other programs"

**Sereen Masri** U.S., BTS Student. Product Owner - Nuvolar



"BTS will give you the broadest skills you can get"



"The knowledge we gain is very applicable to real life"

**Damien Dupont** France, BTS Former Student. Product Analyst - Leadtech Group

**Rebecca Li Wing** China, BTS Former Student. Test Engineer - Test-Cloud

Master awarded by Barcelona Technology School and the University of Barcelona





Shape the Digital Future

# Master in **Big Data Solutions**

Boost innovation with analytics and big data opportunities. Become an international professional able to discover insights and drive innovation in any organization.

# Welcome to BTS

Enabling people to shape the digital future

If you're passionate for technology and want to contribute to drive the digital transformation, Barcelona Technology School is your place.

The digital ecosystem in Barcelona is now warmer than ever. The strategic alignment of the government, the industry and educational institutions like BTS, are mixing the best ingredients to boost the European capital of innovation.

The result of Barcelona's digital strategy is excellent: international companies are landing in Barcelona to relocate their digital and tech headquarters and open professional opportunities for those who are ready.

#### Josep Clotet

**General Manager** 





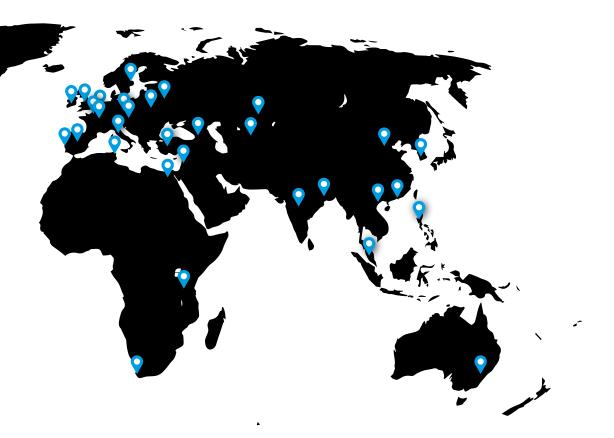
University of Barcelona Ranked #1 in Spain



Countries. Student International Diversity



Tech & Business Background Participants





Women Gender Diversity



Student Employability rate Double degree programs:



## Strategic Advisory Board



Sudha Jamthe Silicon Valley



Marko Gargenta San Francisco



**Ricardo Baeza** Silicon Valley



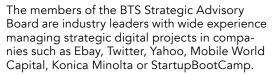
**Aleix Valls** Barcelona



C. Mastrodonato London



**Angel Garcia** Barcelona



This Team helps Barcelona Technology School to take care of the quality and contents of the programs.

## **Academic Directors**



**Sandro Mancuso** Brazil



**Marie Glad** Sweeden



**Eduard Gil** Spain



**Ravi Daswani** UK



**C. Mastrodonato** London



**Aleix Valls** Barcelona

## **Lead Professors**



Lali Soler Data Driven Business



Marc Planagumà Big Data



**Richard Lagrand** Entrepreneurship



Miquel Rodríguez Agile



Carles Mur Creative Technology



**Víctor Pascual** Data Visualization



Juan L. Cano Data Science Foundation



Pau de Jorge Aranda Classical Data Analysis



**Joana Simoes** Advanced Data Analysis



José Luis Muñoz Big Data Legal & Security



Marta Ruiz Artificial Intelligence



**Juan Hernández** Big Data Legal & Security



Xavier Giró Artificial Intelligence



**Liesner Acevedo** Real-time Data Analysis

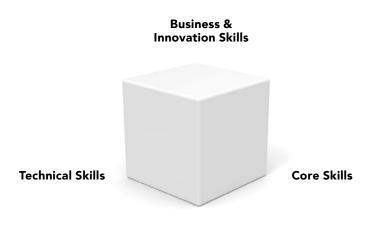


Marc Cardús Infraestructure

View more at: www.barcelonatechnologyschool.com

## **3D Learning** Methodology

Barcelona Technology School has developed its own practical, active and participatory methodology with emphasis on "learning by project" where participants generate their own digital solutions.



This methodology reflects digital industry demand for new professionals with skills such as:

#### **Technical Skills**

Web Development Mobile Development User Experience Big Data Machine Learning Cloud Computing Internet of Things Cyber Security Software Craftsmanship Blockchain

#### Business & Innovation Skills

Digital Transformation Digital & Mobile Business Creative Technology Innovation Entrepreneurship FinTech Legal Tech Change Management Digital Talent & Culture

#### **Core Skills**

Empathy & Communication International Scope Flexibility Collaboration & Network Transversal Vision Curiosity Compromise & Responsibility



THE IOT INDUSTRY

привет!

# **BTS Ecosystem**

Industry Immersion

Barcelona Technology School has assembled an ecosystem of companies that supports BTS programs, providing industry exposure and bringing professional experience to the students through internships and job opportunities.

#### **Project Mentors**

Real & experienced professionals will mentor your digital projects

#### **Digital Companies**

Get professional orientation for your digital career

#### **University of Barcelona**

Ensures academic accreditation, quality and certification

#### Academic Board

High qualified instructors and well-known professionals

#### **Career Mentors**

Visit and learn from the tech leaders

#### **Entrepreneurs & Incubators**

Inspire your own projects and new disruptive digital business

#### Digital Labs &I+D+i

Digital Labs & innovation projects exposure



Some of the companies that support BTS and enroll our students:



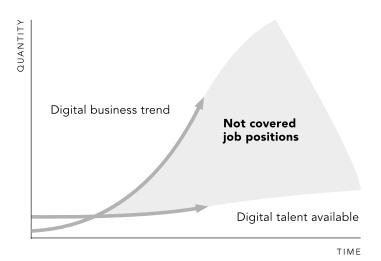
# **Professional Experience**

Digital companies need your talent

Tech industry is exploding and the key digital companies need your talent. Barcelona Technology School connects your career with the digital sector while offers you the most demanded digital knowledge & skills.

#### **Digital Talent Gap**

Need of talent ready to shape the digital future



# By **2024** there will be **4.500.000** unfilled digital jobs worldwide

Source: Bureau of Labor Statistics' Occupational Outlook, Handbook and Career Guide to Industries.

## PAID INTERNSHIPS & JOB OPPORTUNITIES

Your Talent



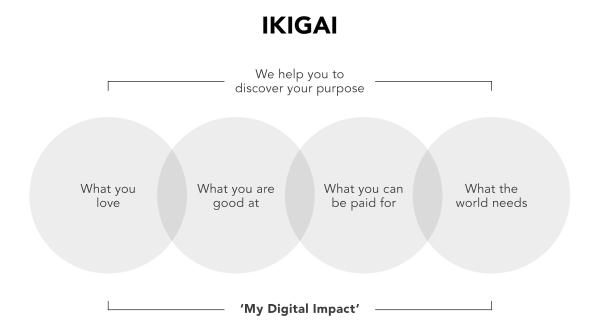
Digital Industry

# **My Digital Impact**

Having a purpose for professional happiness

A Team of mentors will help you to define your own purpose according to what you love, what you are good at, what can you be paid for and how you can improve the world with such amazing skills.

This ensures you focus your energy on a job you really love, which is the best way you can drive a great digital impact.



We help Barcelona Technology School students to achieve their professional goals and find happiness in life doing what they love the most.

This is driven by a japanese concept called IKIGAI, which describes the secrets for a long and meaningful life. To achieve this goal you have to identify your reason for being and your own purpose.

BTS will help you to find your IKIGAI and a Team of mentors will advice you during this exciting journey that will boost your digital impact on the society.

### My Digital Impact Mentors

BTS mentors are generous people that believe in the power of sharing. They will be happy to offer you their vision and wide experience as digital leaders in top global tech companies. Get advice from digital sages that will help you to drive your purpose and develop a great career in the digital industry.

#### Get advise from international digital leaders



Sudha Jamthe Silicon Valley



C. Mastrodonato London



**Charles Ikem** Verona



Susanna Maier Berlin



Marti Escursell Barcelona



Ravi Daswani London



Saul Tessler New York

2018 - 2019 Mentors. A Team of professionals with experience leading digital projects in companies such as:





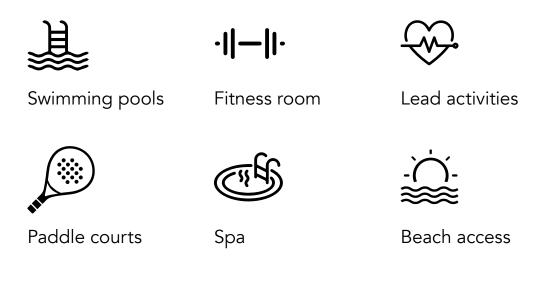








All the BTS students enrolled into a Master program have free access to one of the best sport clubs in the city which is located right in front of the beach. Enjoy indoor and outdoor swimming pools, gym and lead classes, spa, paddle courts and much more. Play sports, make friends or simply take a relaxed bath on the sea.



Club activities:











## **Global Chapters**

New York · Shanghai · San Francisco · Silicon Valley

The Global Chapters programs are an international experience for students & entrepreneurs that want to discover the epicenters of the world's digital ecosystems.



This experience exposes students to how business is done in those ecosystems and creates long lasting relationships between students, companies, and business leaders.

#### Sample Week Itinerary:

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY		
Visit large digital corporations	Tour in Silicon Valley	Entrepreneurship culture immersion	Visit the Palo Alto Research Center	Network building	Private VC and Startup parties	Free		
Meals with digital leaders								

#### Students visit companies like:

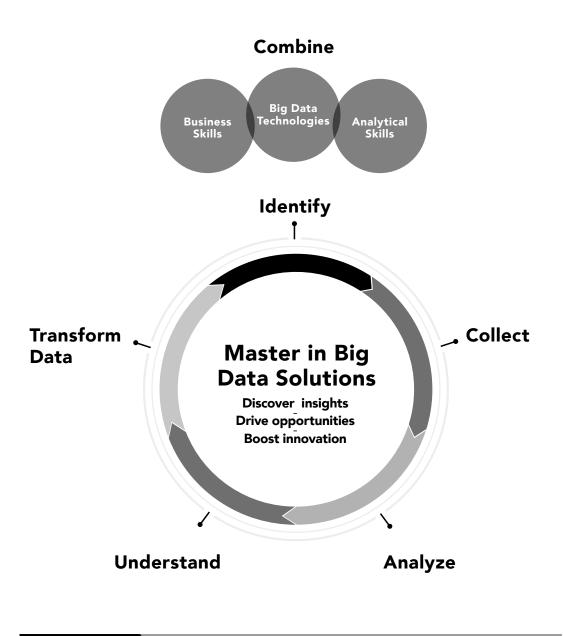




## Master in Big Data Solutions

Become an international professional able to discover insights and drive innovation in any organization.

## Master in Big Data Solutions





Health care, Finance, Technology, Public Administration, Internet of Things, Marketing...

## Contents

Master in Big Data Solutions



#### **Data-Science Foundations**

During the subject the students will learn how to manage data, perform time series analysis and forecasting in Python. They will learn how to fit data to probability distributions and regression models, use Python/Pandas to perform general statistical analysis in their data, apply appropriate and useful Geographic Information System (GIS) tools and Geostatistics in Python to find spatial data patterns.



#### Innovation & Creative Technology

Students will experience the process of discovery, interpretation and ideation. They will learn techniques to identify opportunities and understand customer needs. They will integrate the process of conceptualization and creative design that will help them design innovative digital solutions.



#### **Classical Data Analysis**

Students will learn analytical skills and the most important supervised and unsupervised learning algorithms for regression, classification and clustering, to apply them to an analytic or business intelligence strategy. They will learn how to use Python libraries to run these data mining algorithms and use the trained models for prediction.



#### Infrastructure for Big Data

Students will learn how to use software for managing large amounts of data and fast data streams, particulary focusing on distributed systems for storage and processing data with an emphasis on the open source. They will learn how to design efficient system architectures to capture, process and store Big Data, as well as the best practices in provisioning, deploying, tuning and maintaining Big Data systems.



#### **Data Driven Business**

The students will understand how big data projects can bring value to an organization, how data can be applied to solve real business problems because of the large amounts of data available generated by digitalization. Student will also develop communication and persuasion skills, since data results and projects usually have to be given and carried out in a company context.

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#### **Advanced Data Analysis**

As a continuation of the Classical Data Analysis module, this one will develop the skills to deal with complex data types such as a "basket" (a set of elements like a shopping cart), a network/graph, or georeferenced data. Students will learn different methods to analyse each data type, like association rules mining, algorithms, georeferencing, creation of maps and location-aware models.

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#### **Big Data Legal & Security**

Students will learn what are the legal barriers of the data management and the core security principles in a Big Data project, including confidentiality, integrity and availability (CIA). They will also learn the principles behind symmetric and asymmetric cryptography and they will apply them by building an end-to-end security implementation for a corporate network.



#### **Artificial Intelligence**

Students will learn how to use artificial neural networks in data analysis projects. They will learn methods for training neuronal networks, modern neural network architectures and frameworks, text classification and image classification.



#### Entrepreneurship

Students will learn to shape opportunities, provide the leadership and build the team to create economic and social value. They will create and develop business models for start-ups based on customer development and continuous validation, managing financial metrics and dealing with investors.



#### **Data Visualization**

The students will learn the skills necessary to explain the processes they performed with the data, including the entire data analysis pipeline, and the obtained results, in an effective and clear way to a broad audience. This includes being able to communicate all assumptions and nuances that this may have. Data visualization paradigms will be introduced and explored in the context of storytelling, describing how to use them to convey complex data-driven messages.

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#### **Real-time Data Analysis**

Students will learn the specialized data management infrastructures and algorithms needed to deal with challenging data sources. They will learn distributed algorithms, which are specifically designed for large-scale data being processed in a parallel/distributed computing environment. They will also perform operations in data streams, including clustering data, and use the map-reduce paradigm in a distributed setting.

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#### Agile

The students will immerse in the Agile mindset by experimenting the Agile management practices. At the end of this subject they will be able to practice Scrum, understand Kanban, develop and idea from Vision to Deployment from an Agile perspective and define requirements with User Stories.

ТҮРЕ	LOCATION	DURATION	LANGUAGE
Full Time Master degree	Barcelona, Spain	9 months (1 academic year)	English
ACCREDITATION	CREDITS	INTAKE	FEES
Barcelona Technology School and University of Barcelona	60 ECTs	October	17.000€

Paid Internships & Digital Jobs:

BTS connects students with leading digital companies. Take advantage of the BTS ecosystem and explore professional opportunities during & after the program.





Master awarded by Barcelona Technology School and the University of Barcelona, ranked best university in Spain by:



Academic Ranking of World Universities. 2017



QS World University Rankings, WUR. 2017



Center for World University Rankings. 2017



Best Global Universities. 2017

## **Pre-Course**

Introduction to Software Development

For entry students without technical background that want to enroll the Master in Big Data Solutions.

ТҮРЕ	STARTS	DURATION	FEES					
Full time	September	4 weeks	2.200€					
Technology background is not mandatory								

#### Contents

## Introduction to programming with Python

**Working Environment** 

#### Programming good practices

- 1. Pandas Python Library
- 2. Introduction to Statistics and Probability

#### My first development project

1. Hands on work

The aim of this course is to provide the base knowledge that any student needs to enroll the Master in Big Data Solutions.

# How to apply

Master in Big Data Solutions

If you are passionate about Big Data and you would like to access to job opportunities, develop the best digital talent and have a master experience in Barcelona... we just need from you:

#### **1** Application Form

www.barcelonatechnologyschool.com

#### 2 Motivation Letter & CV

Send the admissions office your CV as well as a motivation letter explaining how do you think Big Data will impact the digital industry in the next five years and how could you contribute to this digital transformation.

You can submit this documentation directly by email.

info@barcelonatechologyschool.com

#### **3** Assessment

Our Admission Board, as well as the director of the program, will analyze your candidature and if you meet the profile of Barcelona Technology School, we will call you to have a chat.

Admissions Office:

"Dynamic and hands-on Masters compared to other programs"

**Sereen Masri** U.S., BTS Student. Product Owner - Nuvolar





Programs awarded by Barcelona Technology School and the University of Barcelona, ranked #1 university in Spain.



98% Student employability rate



Ecosystem of top digital companies & tech labs. International environment of digital leaders from all over the world.



Development of the most demanded digital skills.

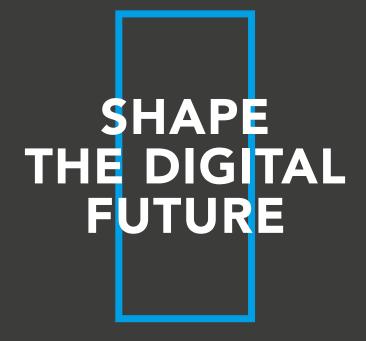


Beach & sports club, located on the beachfront of Barcelona.



Full Health Coverage Insurance

Great opportunities are waiting for BTS graduates













#### **Information and admissions** info@barcelonatechnologyschool.com (+34) 93 304 17 21

#### Location

Barcelona. Almogàvers 119 Barcelona's Technological district (22@)