

# Fundamentals of Computer Engineering

## Module I - Unit 3 Computer Engineering as a Degree and Profession.

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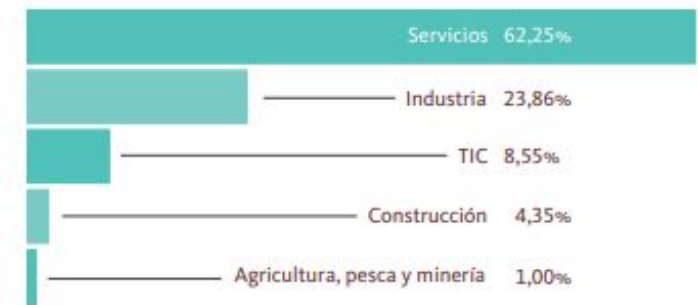
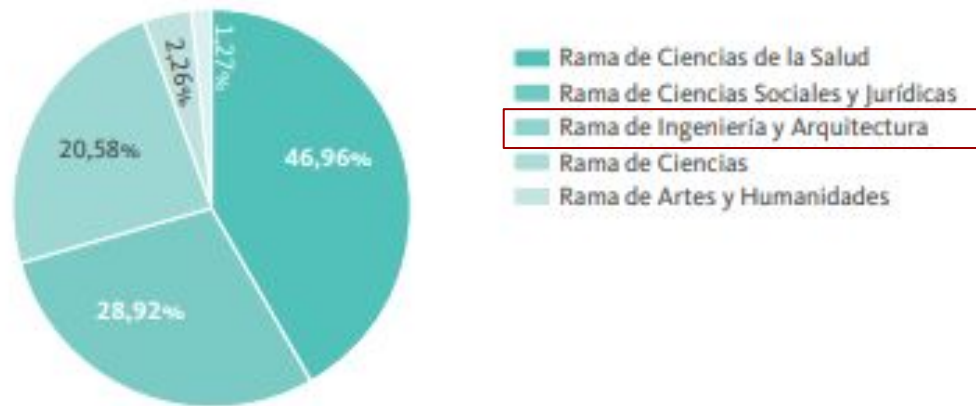
Year: 2022 - 2023

# Which is the employment situation in our industry?

# Computer Science industry in Spain ...

## What is happening in Spain?

Distribución de la oferta de empleo para titulados universitarios según rama de conocimiento (Tabla 1.1.12)



La migración masiva hacia el trabajo remoto e híbrido y la obligada digitalización de las empresas ha requerido inversiones en infraestructuras y servicios. Esto ha provocado subidas importantes en los servicios de consultoría informática/telecomunicación y en telecomunicaciones, que aumentan en un 4,35% y un 2,63%, respectivamente.

Source



## What is happening in Spain?

Digital transformation has increased employability after the pandemic.

### ¿En qué áreas?

2.4.1.6

Tecnología, informática y telecomunicaciones	11,58%
Administración y Finanzas	10,53%
Marketing, comunicación y contenidos	9,47%
Comercial y ventas	7,37%
Inteligencia de negocio y Big Data	7,37%
Calidad, I+D, PRL y medio ambiente	6,32%
Compras, logística y transporte	6,32%
Atención al cliente	5,26%
Banca y seguros	5,26%
Recursos Humanos	4,21%
Dirección y gerencia	3,16%
Ingeniería y producción	3,16%
Educación / Enseñanza	2,11%
Sanidad y servicios sociales	2,11%
Diseño y maquetación	1,05%
Hostelería y turismo	1,05%
Legal	1,05%

2.4.1.3

### ¿Qué herramientas digitales consideras más importantes?

Software, plataformas, herramientas	68,42%
Habilidades tecnológicas generales	57,89%
Ciberseguridad	32,63%
Cloud	20,00%
Inteligencia Artificial y Big Data	17,89%
Internet de las Cosas (IoT)	12,63%
Blockchain	4,21%
Otras	4,21%

Source



## What is happening in Spain?

How Computer Science Jobs Are Distributed in Spain?

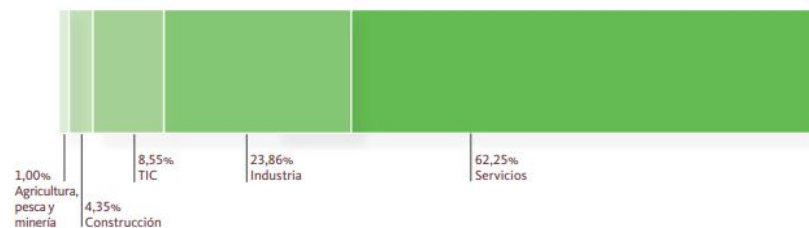
### Distribución de ofertas de empleo en el macrosector TIC

4.0.7

Sector	2021		2020		Variación dentro del sector	Variación dentro del global de oferta
	% sobre TIC	% sobre España	% sobre TIC	% sobre España		
Informática	47,85 %	4,09 %	51,78 %	4,63 %	-3,94 %	-0,54 %
Telecomunicaciones	22,77 %	1,95 %	20,14 %	1,80 %	2,63 %	0,15 %
Consultoría Informática/Telecomunicación	18,11 %	1,55 %	13,77 %	1,23 %	4,35 %	0,32 %
Internet	10,05 %	0,86 %	13,02 %	1,16 %	-2,97 %	-0,30 %
Equipamiento y Distrib. Informática	1,01 %	0,09 %	1,09 %	0,10 %	-0,08 %	-0,01 %
Multimedia	0,22 %	0,02 %	0,20 %	0,02 %	-0,03 %	0,00 %

GRÁFICO (4.0.1)

Ofertas de Empleo en España por macrosectores económicos



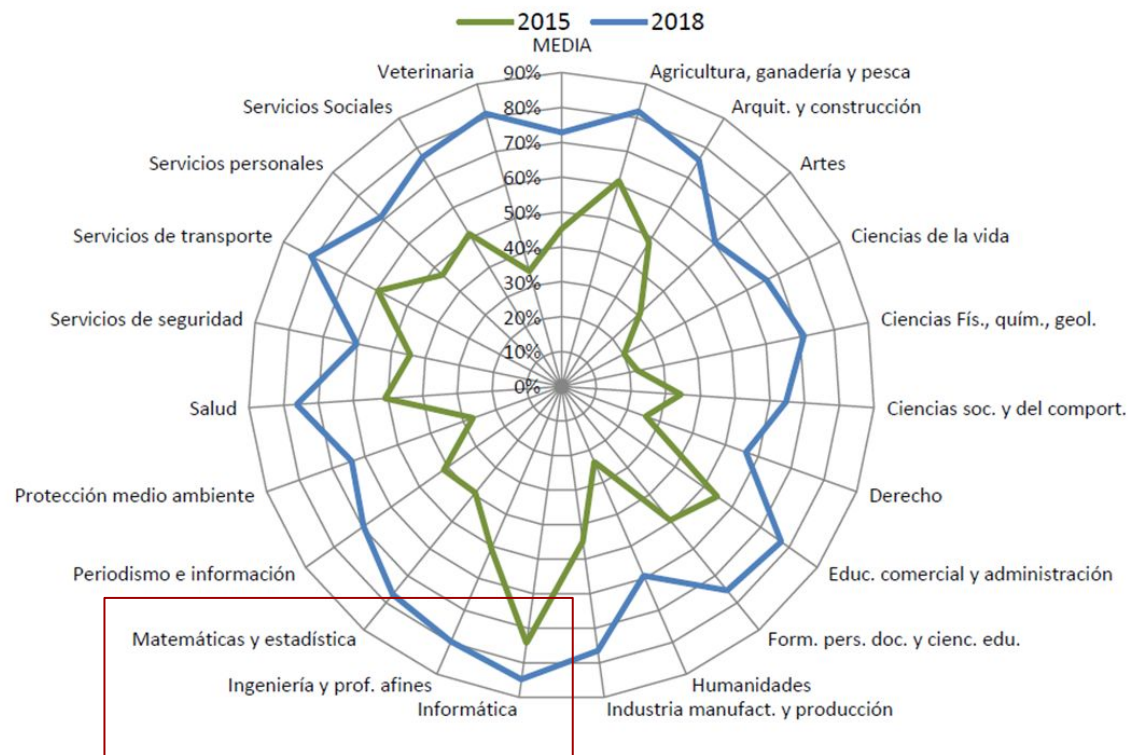
Source



# Computer Science industry in Spain ...

## What is happening in Spain?

How difficult is to find a job in Computer Science industry?



Employability is increasing in areas related to computer science due to the demand for specialists.

- Maths.
- Statistics.
- Physics.

Source



# Computer Science industry in Spain ...

## What is happening in Europe?

Coming soon: AWS launching new Region in Spain by mid-2022



New Google Cloud region in Madrid, Spain now open



Google Cloud

Meta will create 2,000 jobs in five years and open a new data centre (a Meta lab), in Castile-La Mancha.



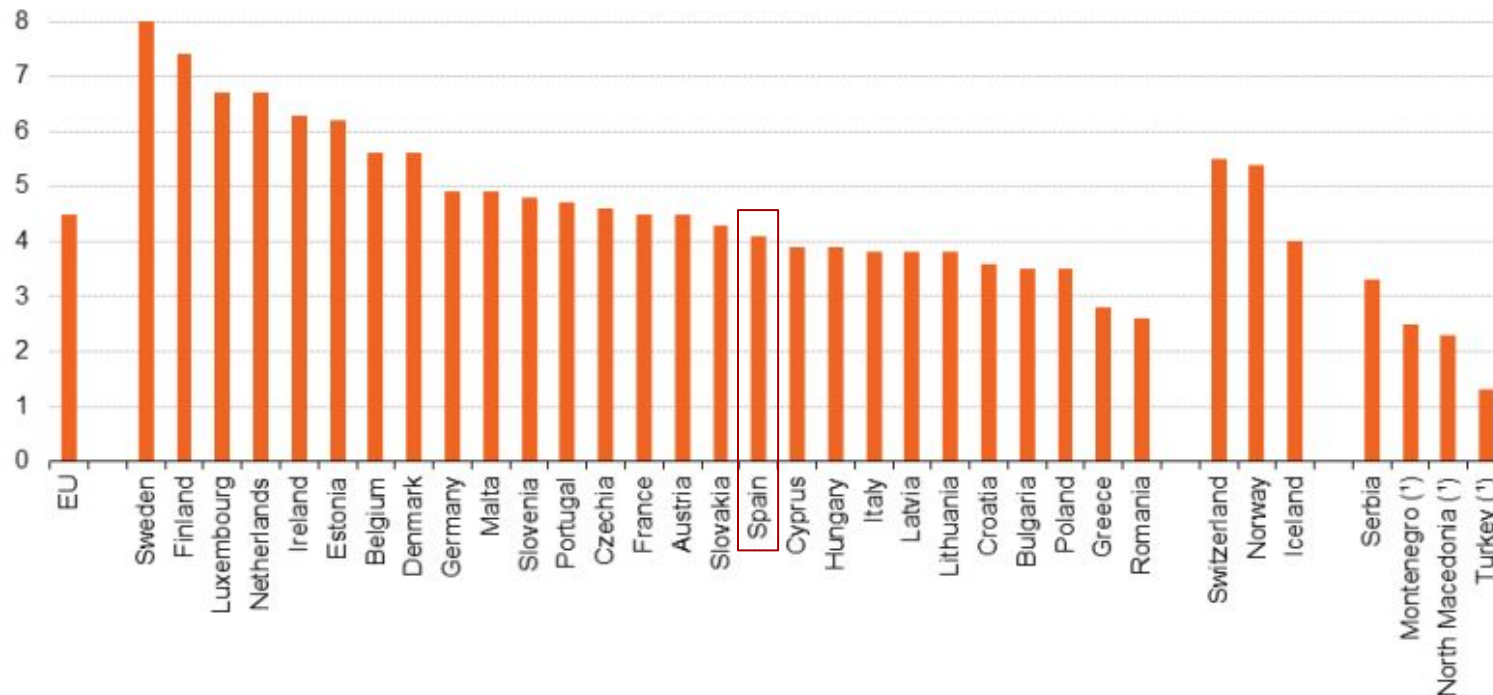
# Which is happening in the world?



## What is happening in Europe?

Proportion of ICT specialists in total employment, 2021

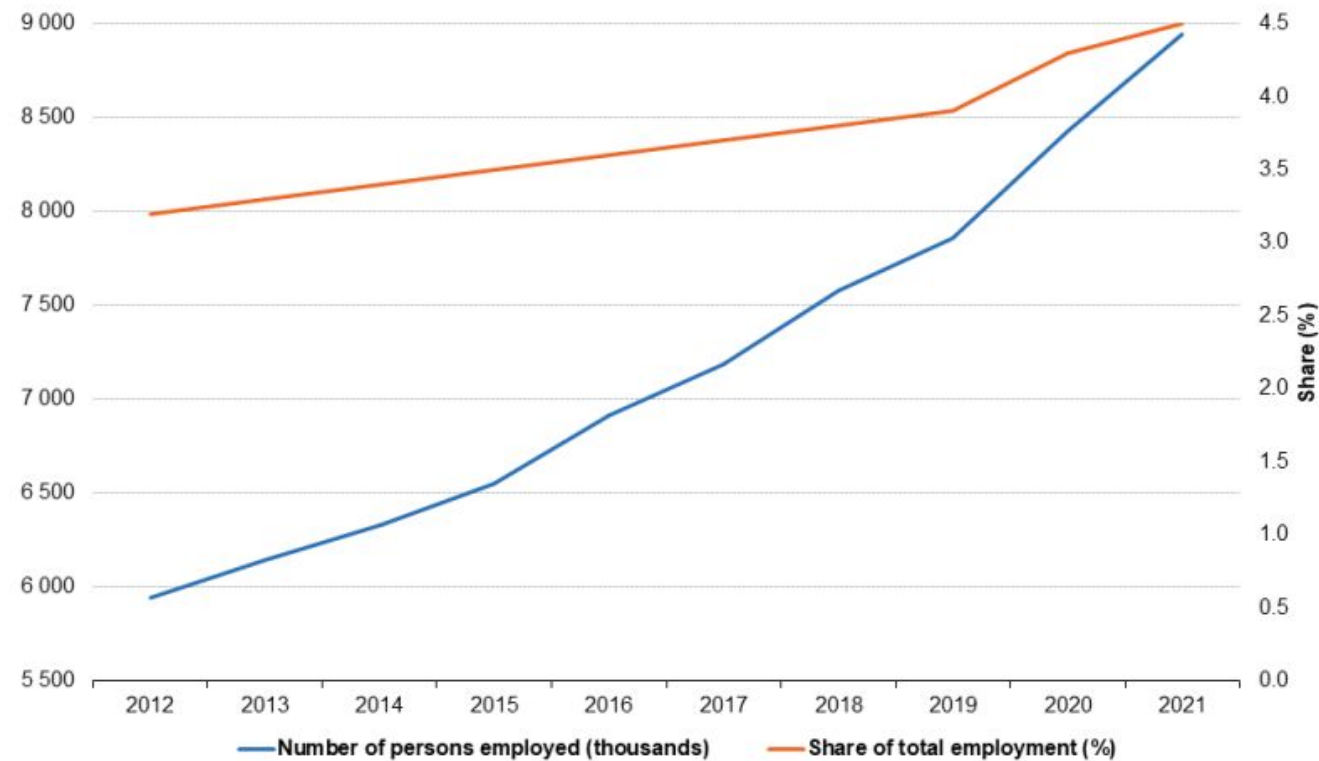
(%)



Source [eurostat](https://ec.europa.eu/eurostat)

## What is happening in Europe?

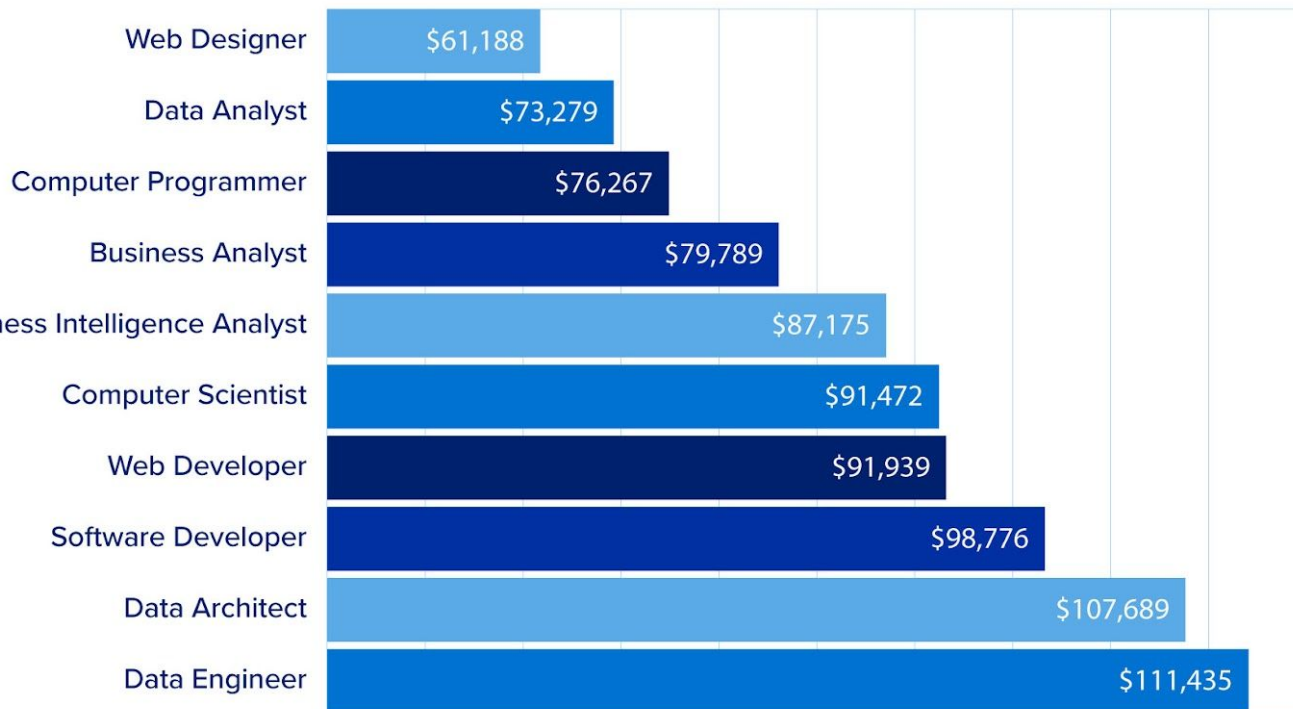
ICT specialists, EU, 2012-2021



Source [eurostat](#) 

# Computer Science industry in world ...

## What is happening in the world? Computer Science Salaries



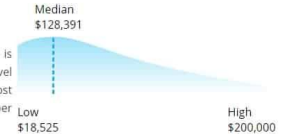
### Data engineer: Salary

Based on 12,566 salaries

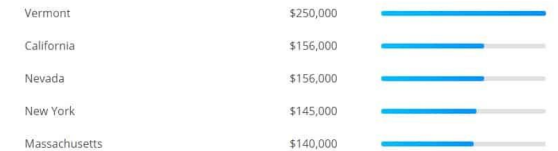
Year Month Week Hour

**\$128,391** / Year

The average **Data Engineer** salary in USA is **\$128,391** per year or **\$65.84** per hour. Entry level positions start at **\$18,525** per year while most experienced workers make up to **\$200,000** per year.



### Data engineer salaries per region

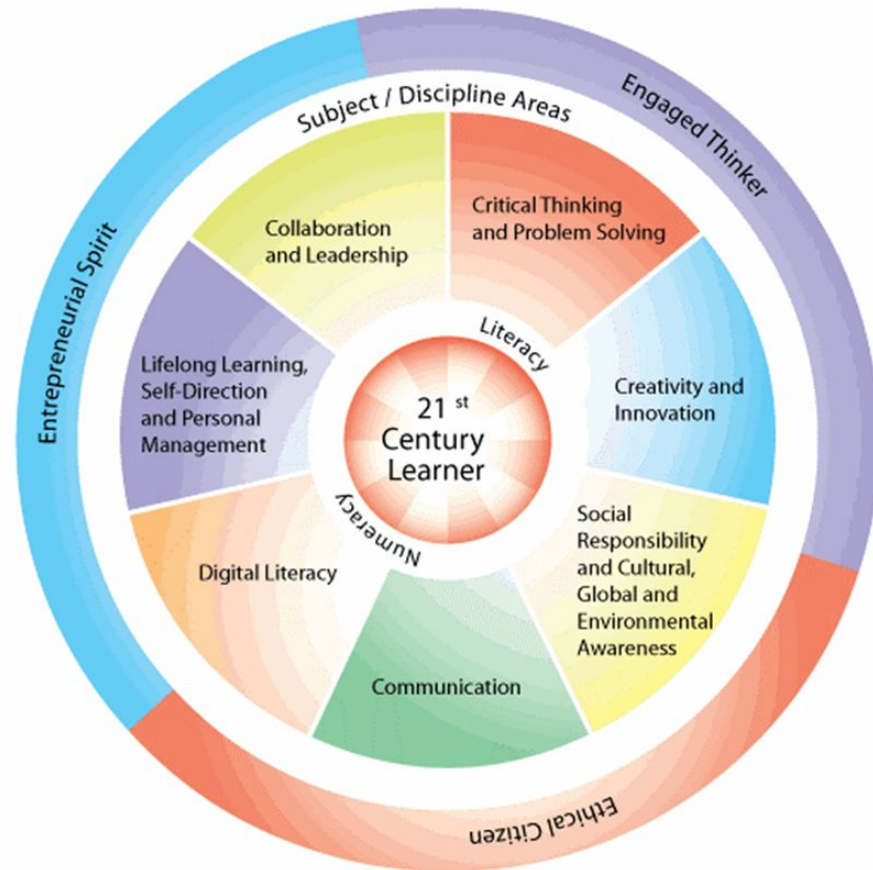


ing Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool."  
?) <http://www.burning-glass.com>

# The curriculum approach

# Which are the most important skills?

# The curriculum approach.



## 21st Century Skills Development

Improving your English communication skills is at the foundation of all of our programs but we have found that there are many other key skills needed to give us the advantage in today's competitive world. We have included these skills in our programs.

### camps



### create club workshops



### professional development



### teacher training



# The curriculum approach.

## Listening



# The curriculum approach.

## Negotiation





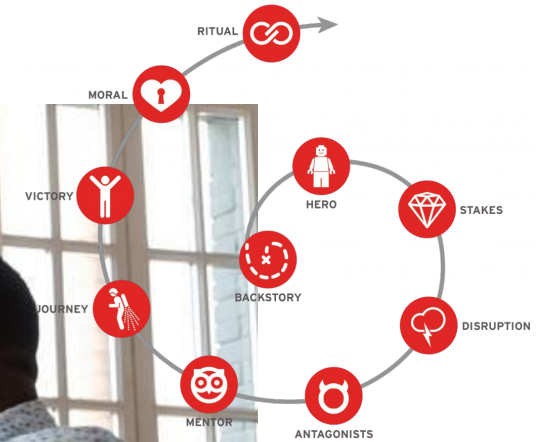
# The curriculum approach.

## Public speaking



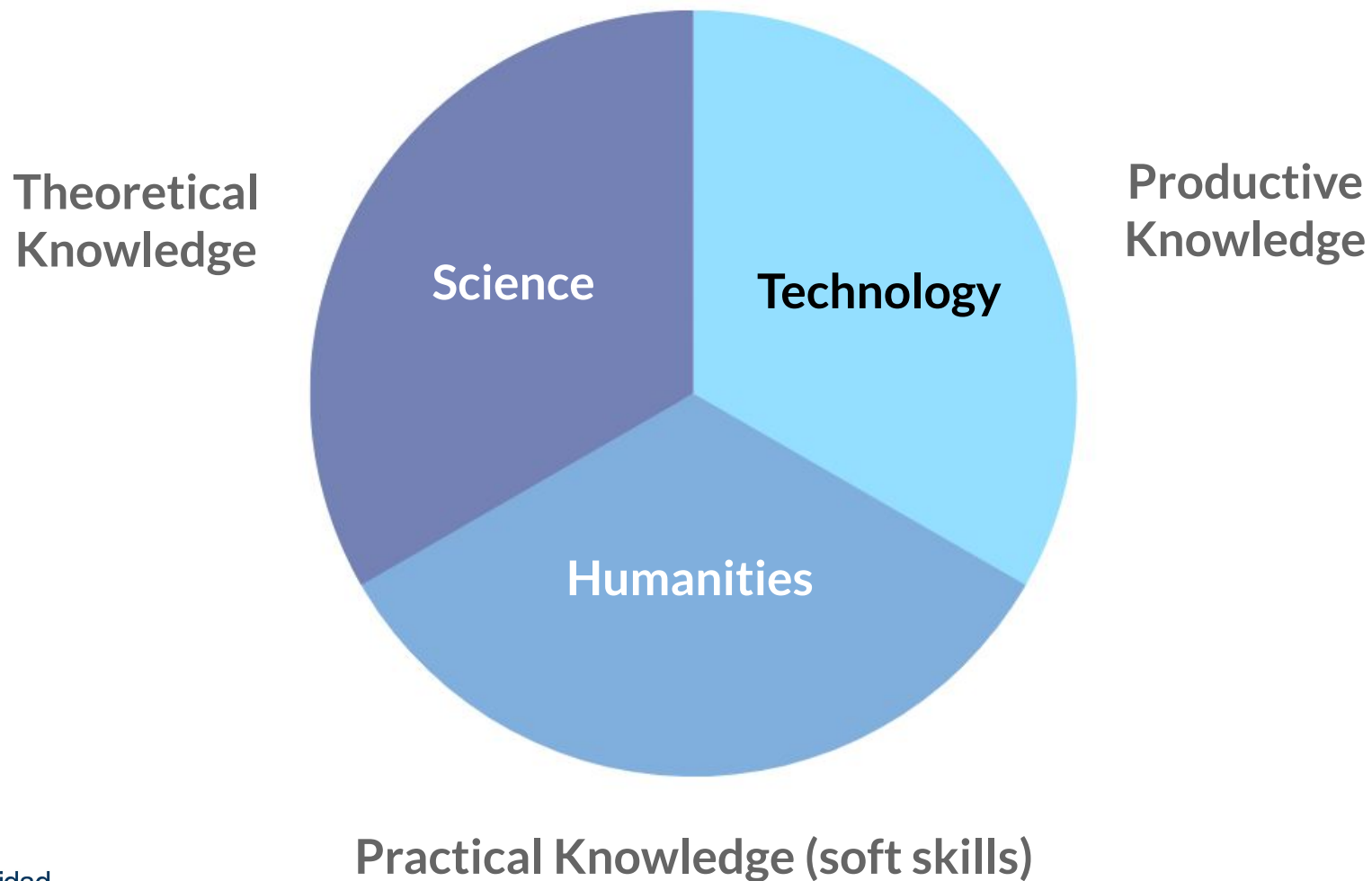
# The curriculum approach.

## Storytelling



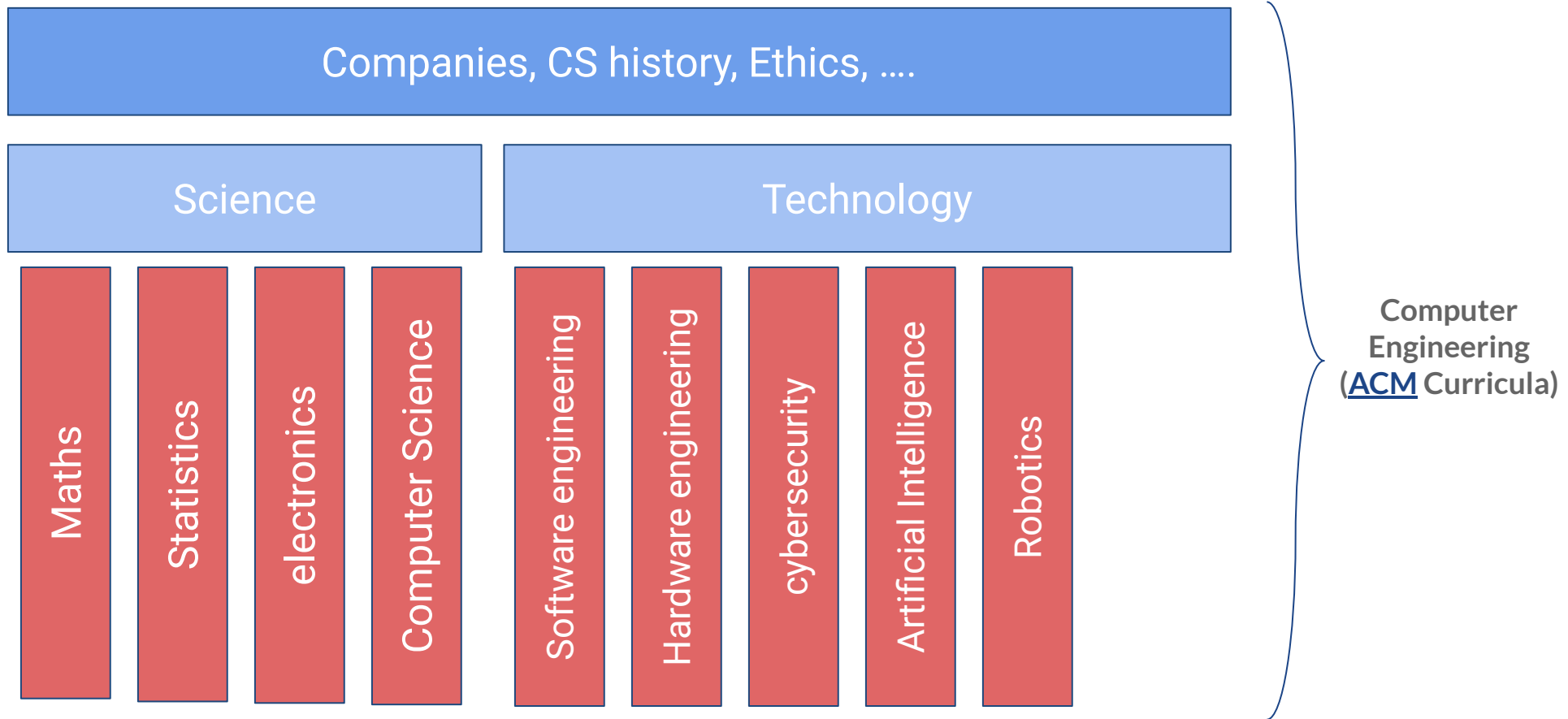
# The curriculum approach.

## What do you should learn?



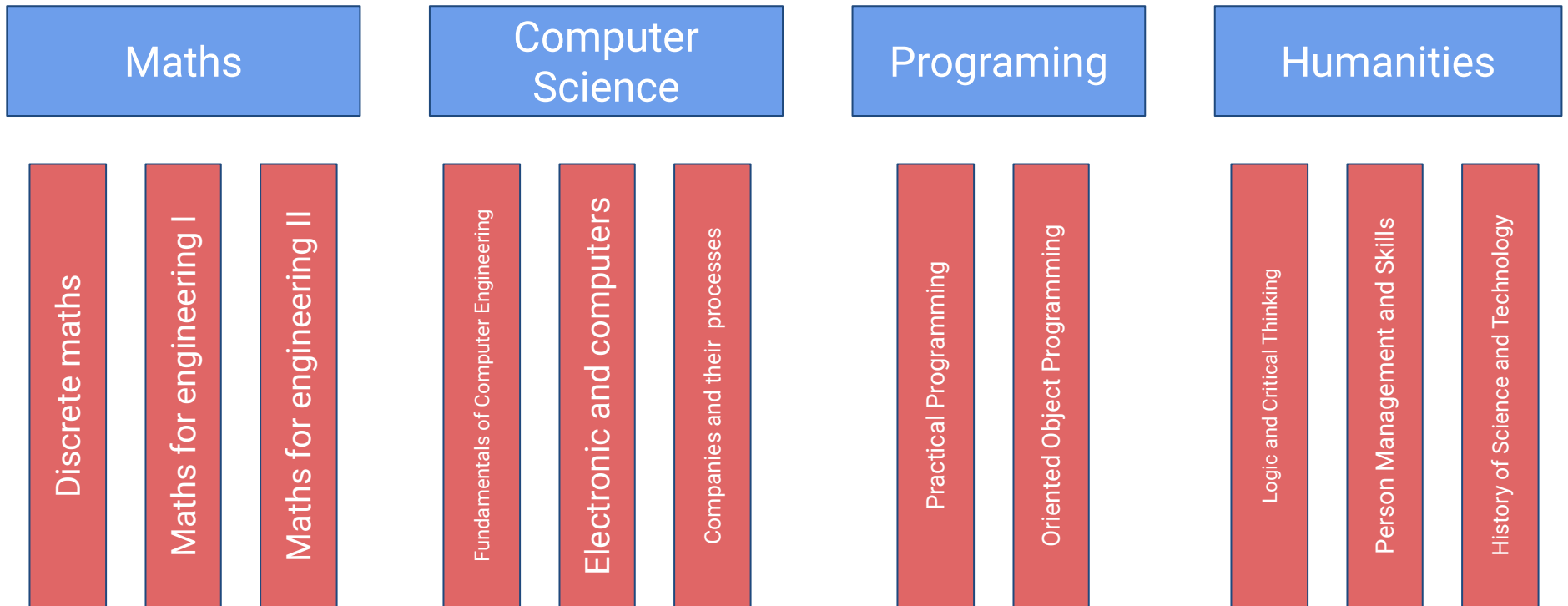
# The curriculum approach.

## What do you should learn?



# The curriculum approach.

## The curricula in UFV ...



# Which are the most important skills for a computer science ... ?

# Skills for a computer science person .....

A computer science person ...

Someone which contributes to the improvement of society, facilitates a happier life and expands the possibilities for a fulfilling life by developing, with others, IT solutions.



# Skills for a computer science person .....

A computer science person ...

Someone which contributes to the improvement of society, facilitates a happier life and expands the possibilities for a fulfilling life by developing, with others, IT solutions.

**Someone which create IT solutions to help people or companies.**





# Skills for a computer science person .....

## Which are the challenges?



To ensure that technological progress preserves human values and favours the development of people and civilisations.

**Research**

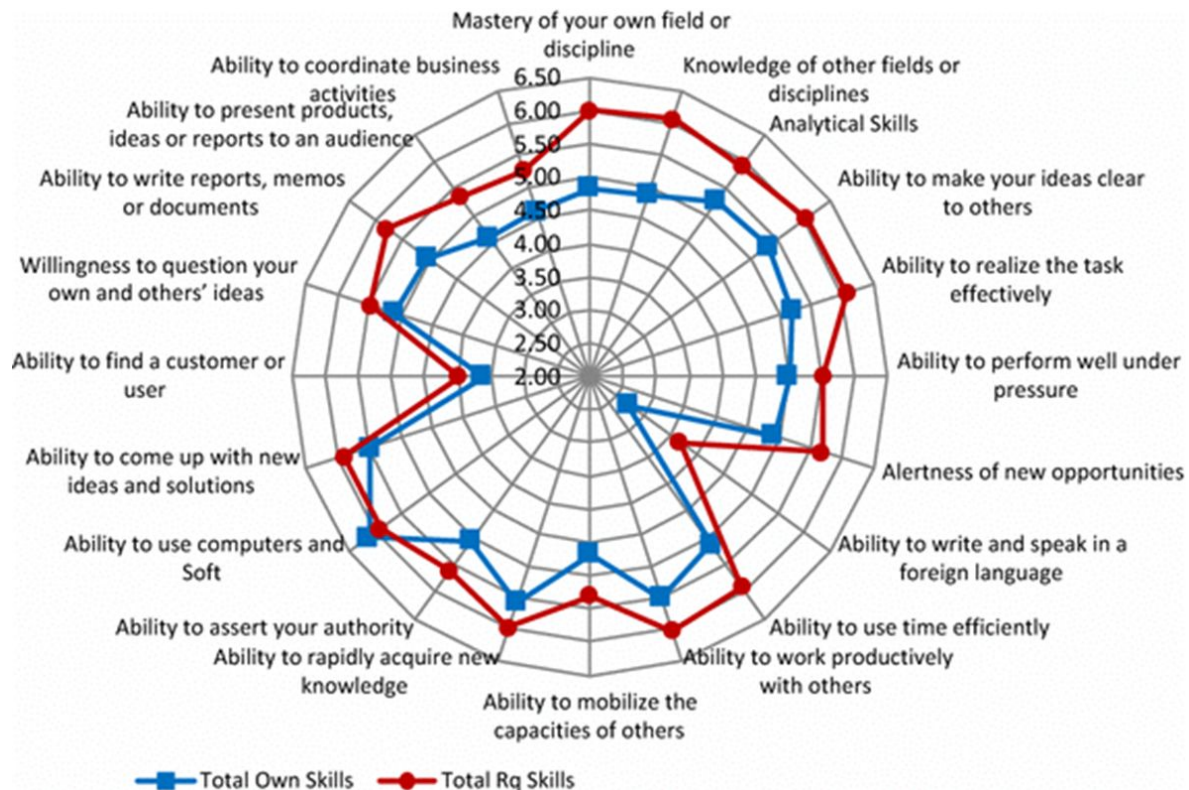


To ensure that technologies and systems drive the development of people and organisations.

**Consulting,  
development and  
innovation**

# Skills for a computer science person .....

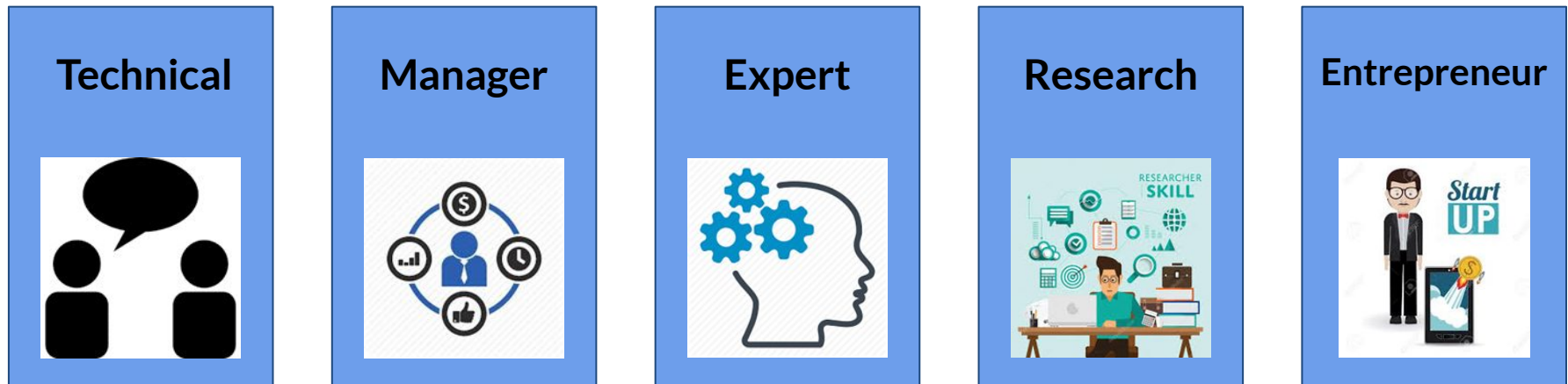
## Which is your professional profile?



# Skills for a computer science person .....

## Which is your professional profile?

There different ways to group the different profiles in the Technology Industry (TI) ...



You can in some of them or you can lead one of them ... it is depends of you.

# Skills for a computer science person .....

## UFV competencies ...

- **Ethical and people-oriented:** in the performance of their profession, they shall be guided by a clear concept of what is good and a desire to do good for others. He/she will therefore orient his/her activity, in the ends and means, towards people.
- **Creativity and innovation:** they will not be limited by the technologies and procedures they already know to solve their clients' current problems, but will focus on people and will have the capacity to innovate in the search for solutions, developing new techniques and tools, or combining existing ones in an original way.

# Skills for a computer science person .....

## UFV competencies ...

- **Curiosity and autonomous learning:** they will show a spirit of constant search and will have the capacity and taste for learning, continuously improving their skills and knowledge to provide a better response to the needs of their clients and society as a whole.
- **Teamwork and social skills:** they will have the ability to relate to other people, especially in their work teams but also with clients or suppliers, promoting meetings and placing diversity, tolerance and respect as values.

# Skills for a computer science person .....

## UFV competencies ...

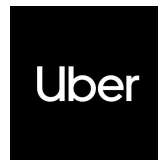
- **Leadership and social responsibility:** he/she will be able and willing to be an agent of change and social transformation, committed to his/her own objectives and those of his/her team, as well as to his/her social environment, responding to a vocation of service and contribution to the common good, with humility and integrity.
- **Personal leadership and excellence:** protagonist of their life, they will be oriented towards action and the search for ways to be able to develop their own life project and, more specifically, their professional project, responding to their vocation and seeking excellence.

# Where will you work?

# Key companies in the industry



TESLA



BostonDynamics



Meta



SONY

