

The current context of Computer Science

MODULE 1 / UNIT 3 / 0.4

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FUNDAMENTALS OF COMPUTER ENGINEERING

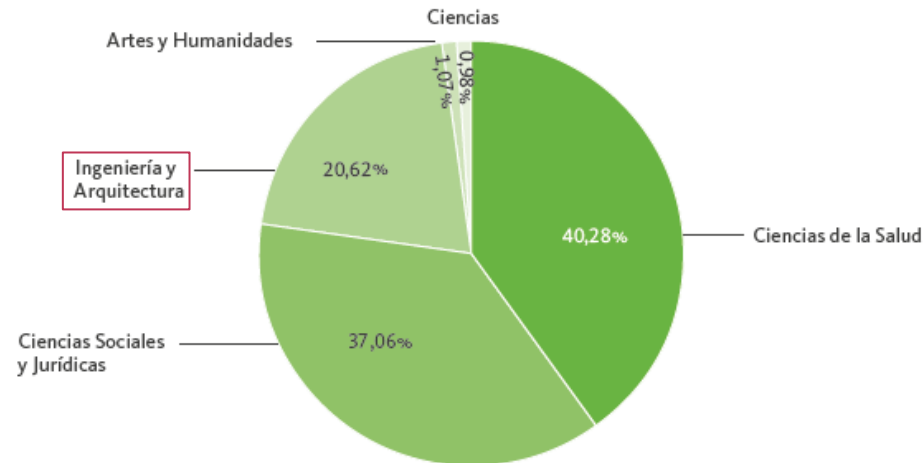
What is the current employment situation within our industry?

A Global Perspective

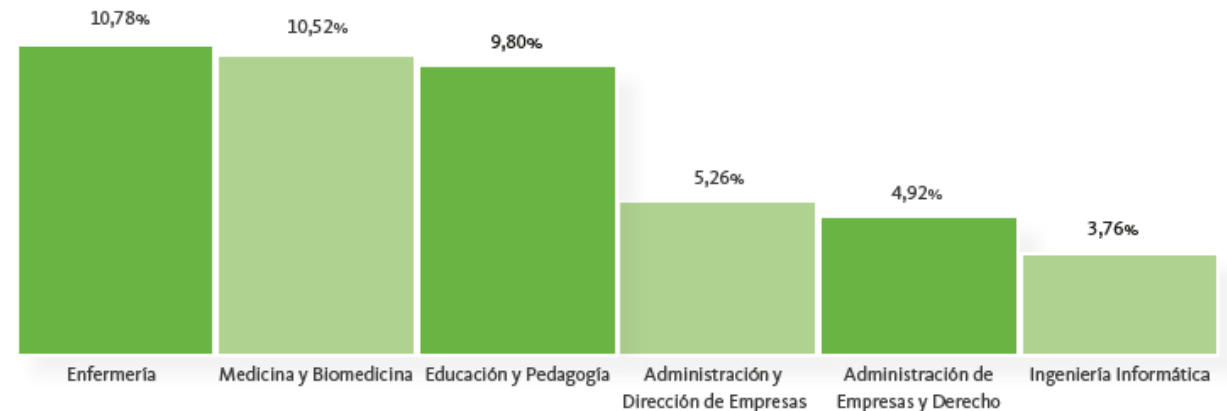
01

What is happening in Spain?

Distribución de la oferta de empleo para titulados universitarios según rama de conocimiento



Carreras universitarias más buscadas por las empresas



Three years after the start of the pandemic, the option of **remote work remains**, although in most cases it is combined with in-person work in a hybrid format.



What is happening in Spain?

Digital transformation has led to an enhanced employability landscape in the wake of the pandemic.

Comercial y Ventas	47,92 %
Ingeniería y Producción	33,33 %
Administración y Servicios Generales	31,25 %
Atención al Cliente	27,08 %
Tecnología, Informática y Telecomunicaciones	14,58 %
Marketing, Comunicación y Contenidos	14,58 %
Inteligencia de Negocio y Big Data	6,25 %
Recursos Humanos	6,25 %
Calidad, I+D, PRL y Medio Ambiente	6,25 %
Legal	6,25 %
Compras, Logística y Transporte	4,17 %
Dirección General y/o Gerencia	2,08 %
Diseño y maquetación	0,00 %

If a company make new hires, in which functional areas will they be?

Titulación universitaria	2022		2021	
	Ofertas ⁽¹⁾	Ofertas ⁽²⁾	Ofertas ⁽¹⁾	Ofertas ⁽²⁾
Enfermería	10,78 %	4,02 %	12,42 %	4,52 %
Medicina y Biomedicina	10,52 %	3,92 %	13,41 %	4,88 %
Educación y Pedagogía	9,80 %	3,66 %	1,95 %	0,71 %
Administración y Dirección de Empresas	5,26 %	1,96 %	5,36 %	1,95 %
Administración de Empresas y Derecho	4,92 %	1,83 %	5,18 %	1,89 %
Ingeniería Informática	3,76 %	1,40 %	3,40 %	1,24 %
Psicología y Psicopedagogía	2,70 %	1,01 %	1,96 %	0,71 %
Ingeniería Industrial	2,50 %	0,93 %	3,50 %	1,27 %
Fisioterapia	2,31 %	0,86 %	2,42 %	0,88 %
Ingeniería de Telecomunicaciones	1,63 %	0,61 %	1,20 %	0,44 %
Ciencias del Trabajo, Relaciones Laborales y Recursos Humanos	1,47 %	0,55 %	1,79 %	0,65 %
Comercio y Marketing	1,41 %	0,53 %	2,03 %	0,74 %
Economía	0,91 %	0,34 %	1,25 %	0,46 %
Ingeniería Eléctrica	0,89 %	0,33 %	0,73 %	0,27 %
Ingeniería en Geomática y Topografía	0,75 %	0,28 %	0,41 %	0,15 %
Ingeniería Mecánica	0,73 %	0,27 %	0,98 %	0,36 %
Ingeniería Civil	0,60 %	0,22 %	0,51 %	0,19 %
Ingeniería en Electrónica Industrial y Automática	0,58 %	0,22 %	0,63 %	0,23 %
Ingeniería Electromecánica	0,56 %	0,21 %	0,39 %	0,14 %
Arquitectura	0,53 %	0,20 %	0,38 %	0,14 %
Sin especificar temática específica de la titulación universitaria	31,85 %	11,88 %	32,15 %	11,71 %
Otras titulaciones	5,53 %	2,56 %	7,94 %	4,11 %

(1) % sobre las ofertas de empleo que piden titulados universitarios

(2) % sobre el total de las ofertas de empleo

Most In-Demand University Degrees in Job Listings

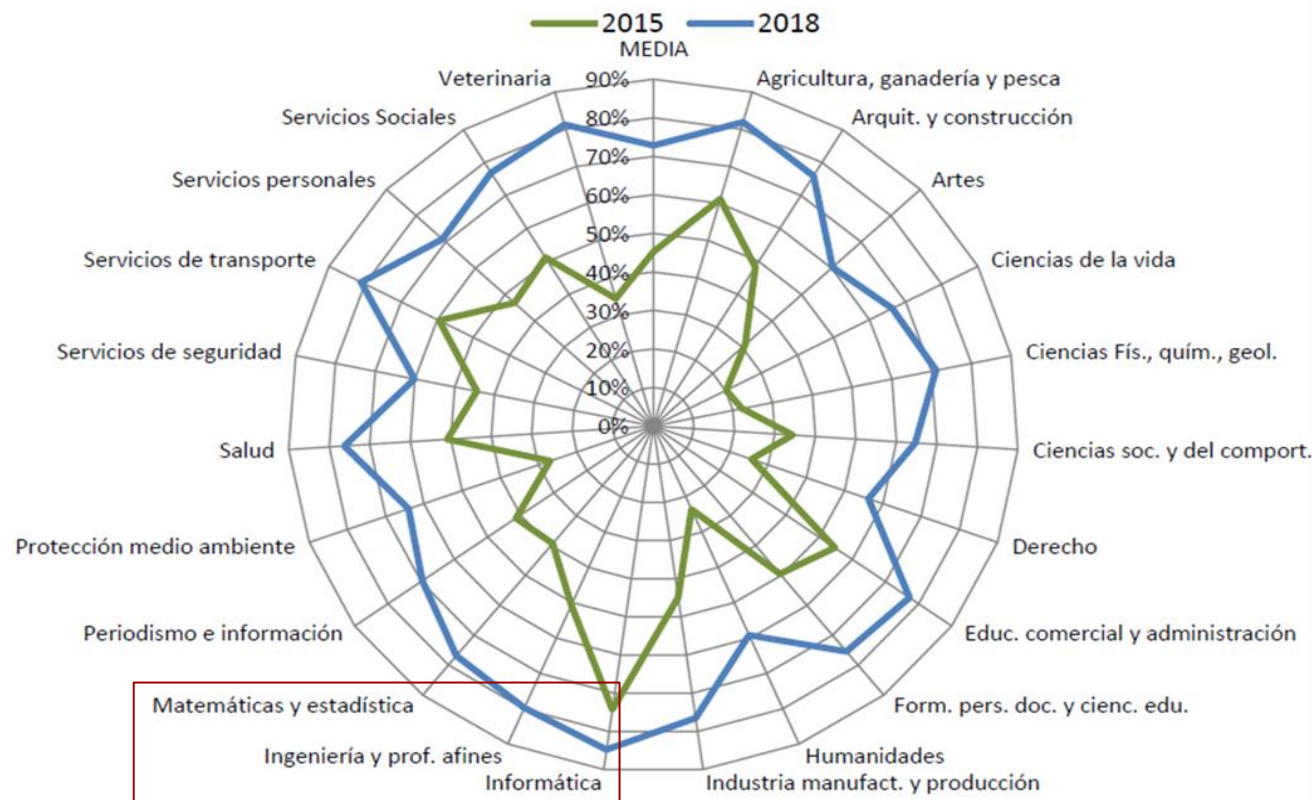


How Computer Science Jobs Are Distributed in Spain?

Sector	2022		2021		Aumento dentro del sector	Aumento dentro del global de oferta
	% sobre TIC	%sobre España	% sobre TIC	%sobre España		
Informática	50,88 %	5,03 %	47,85 %	4,09 %	3,03 %	0,94 %
Telecomunicaciones	22,18 %	2,19 %	22,77 %	1,95 %	-0,58 %	0,25 %
Consultoría Informática/Telecomunicación	21,28 %	2,10 %	18,11 %	1,55 %	3,17 %	0,56 %
Internet	4,00 %	0,40 %	10,05 %	0,86 %	-6,05 %	-0,46 %
Equipamiento y Distrib. Informática	1,47 %	0,15 %	1,01 %	0,09 %	0,46 %	0,06 %
Multimedia	0,19 %	0,02 %	0,22 %	0,02 %	-0,03 %	0,00 %



What is happening in Spain?



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

- Maths.
- Statistics.
- Physics.
- Data Science.
- Artificial Intelligence.



What is happening in Spain?

AWS launched new Region in Spain by mid-2022



New Google Cloud region
in Madrid, Spain now open

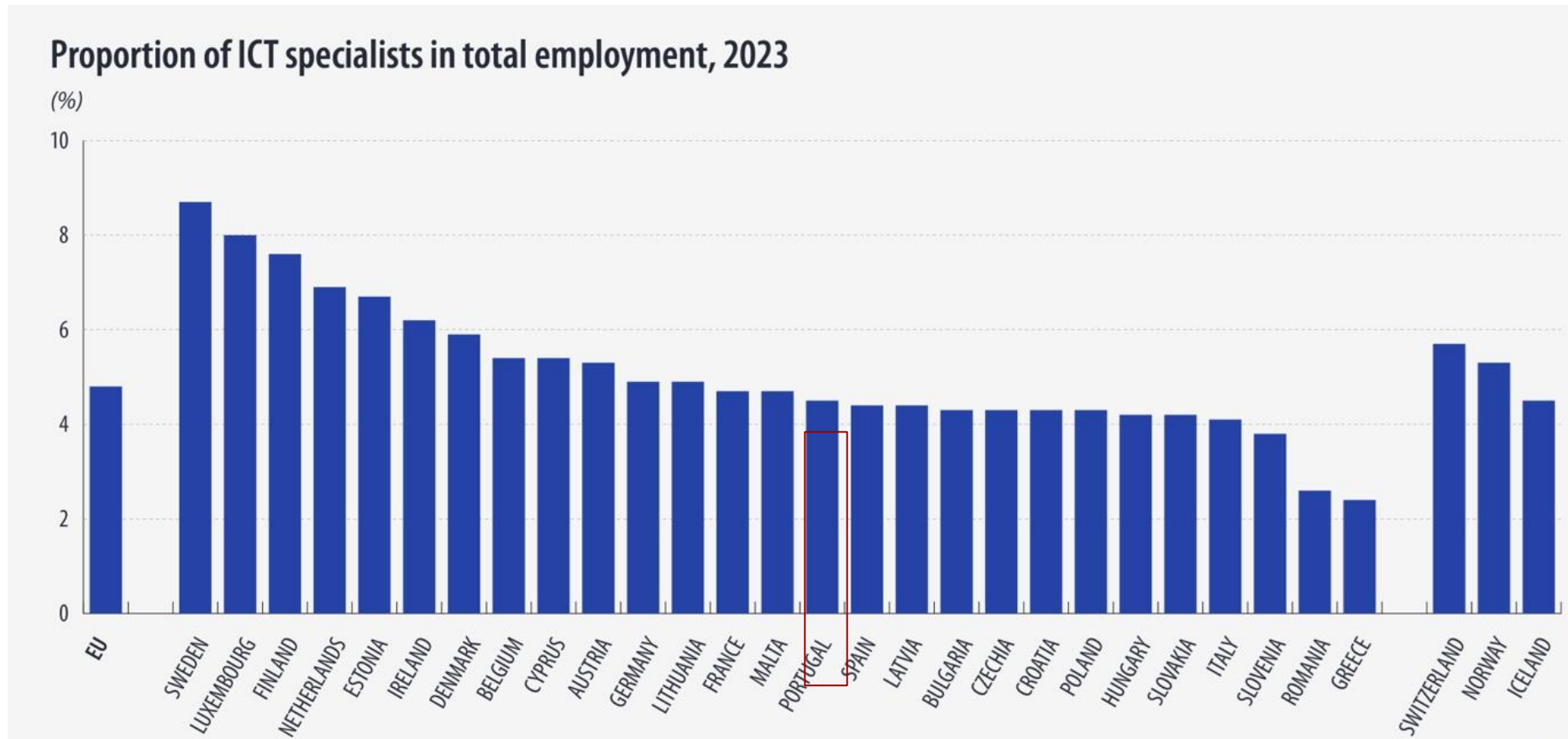


Google Cloud

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

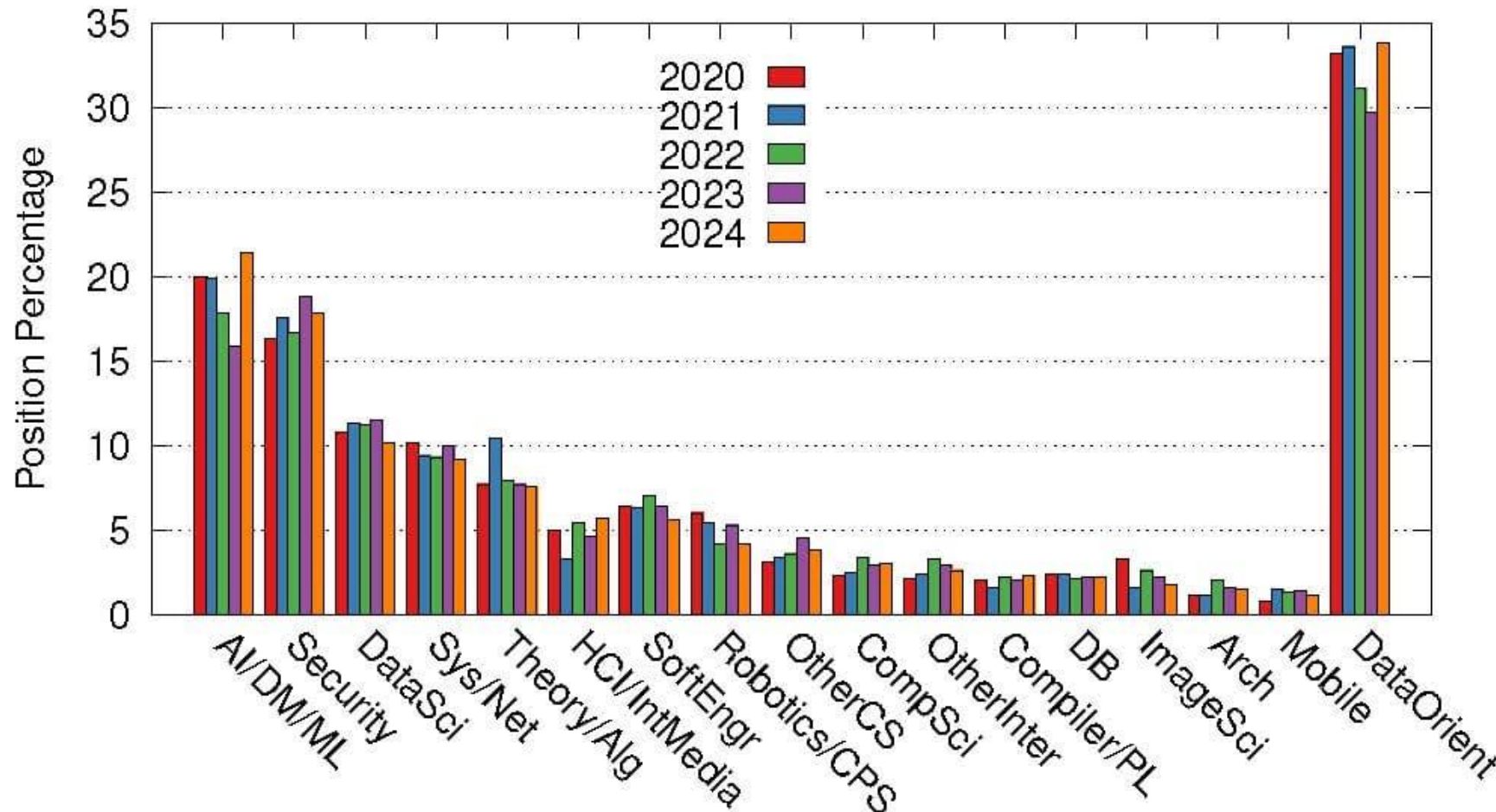


What is happening in Europe?



Information and Communication Technology (ICT)

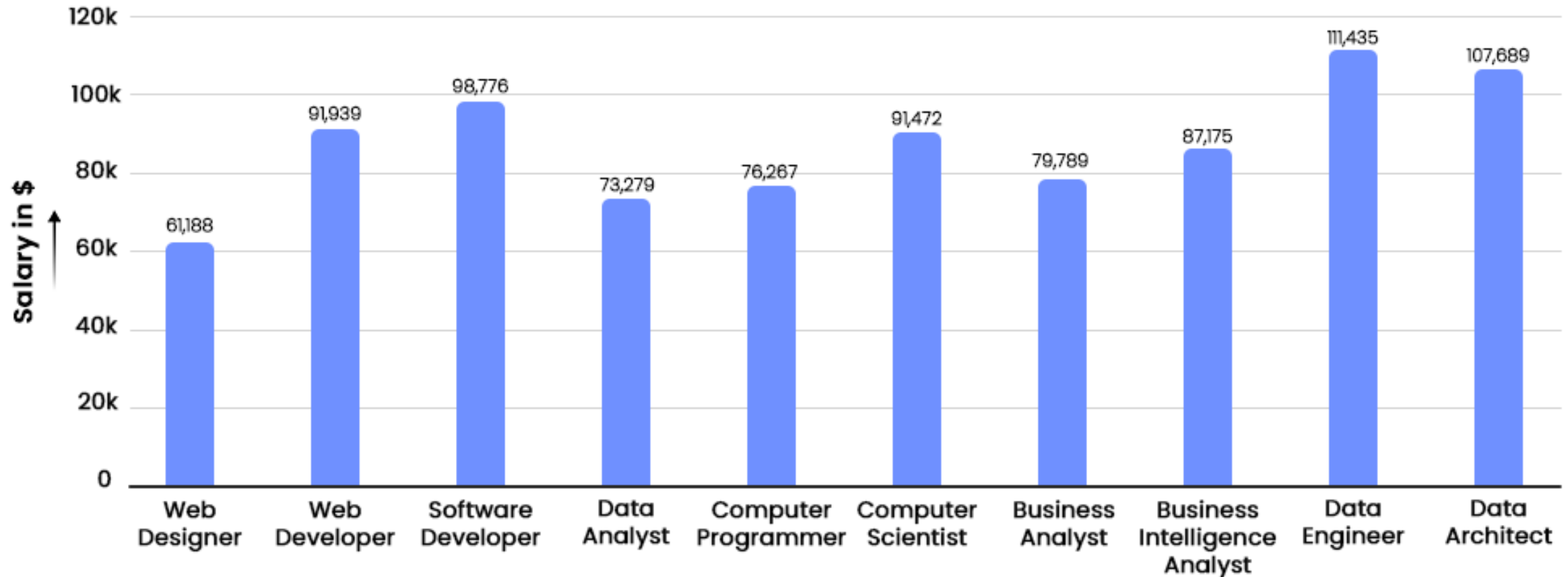
What is happening in the world?



Future Computer Science Needs



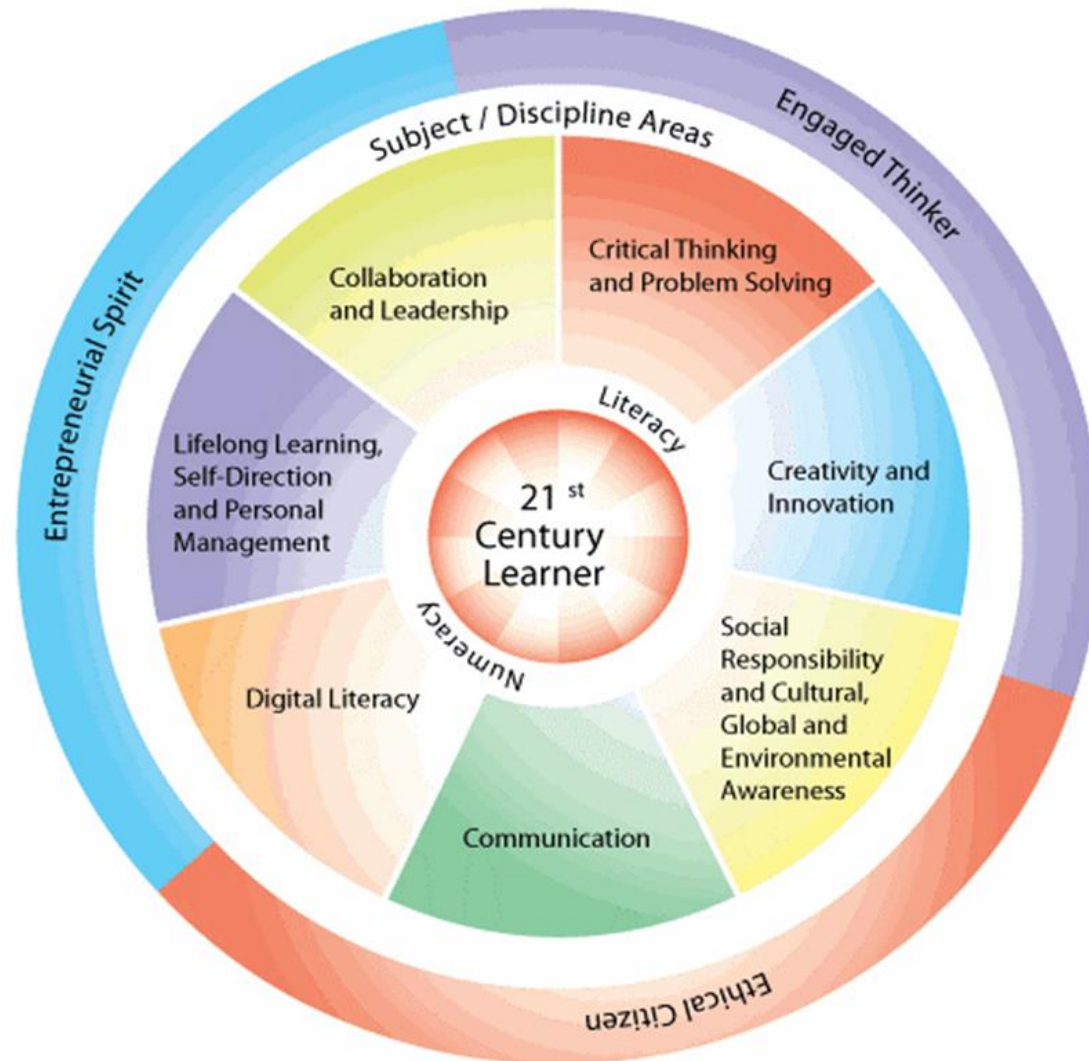
What is happening in the world?



The Curriculum Framework

02

Which are the most important skills?



Listening



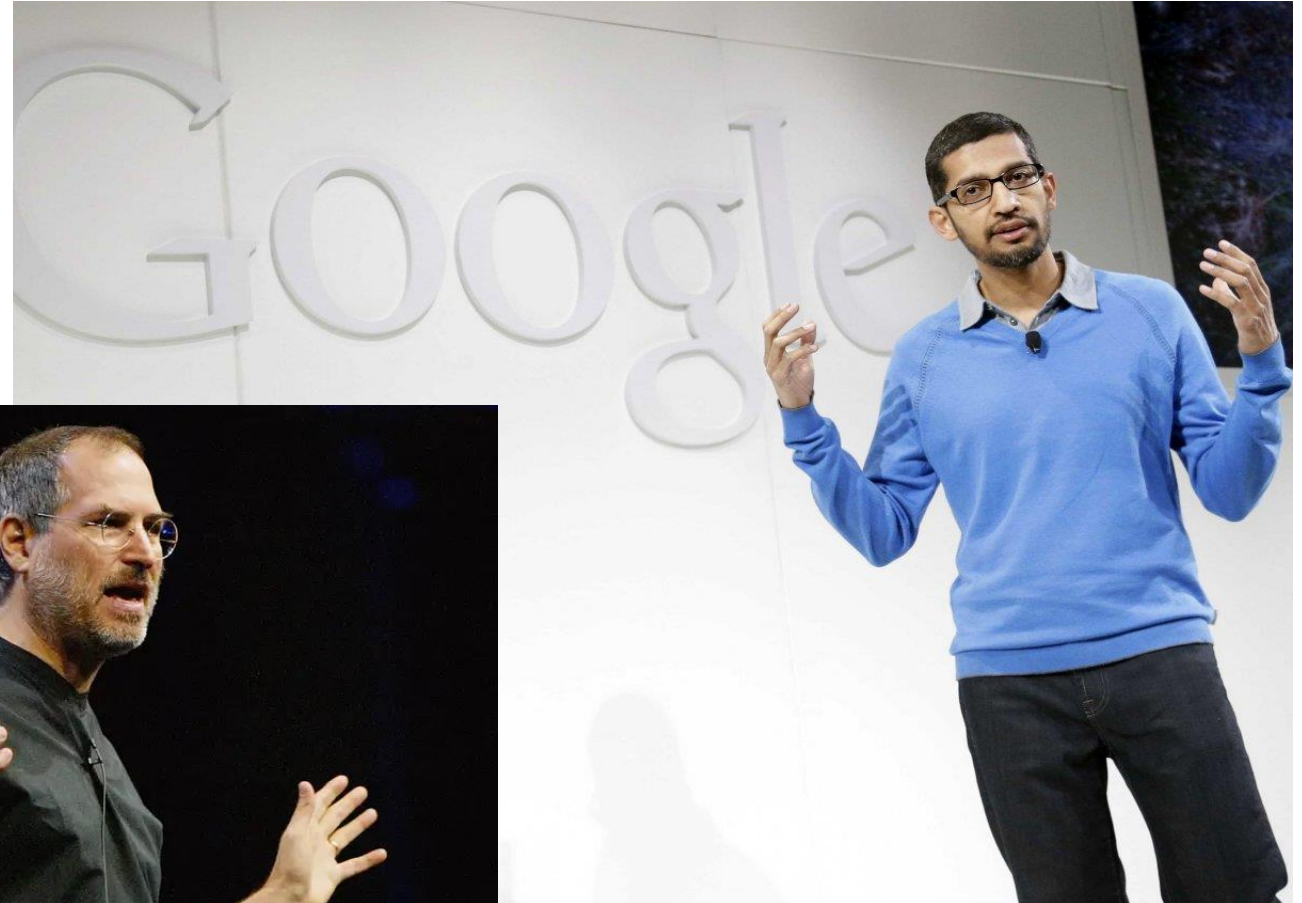
Negotiation



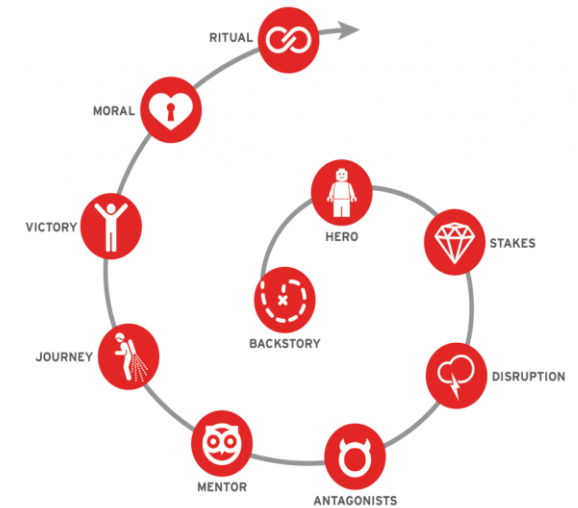
How to Reach Agreements



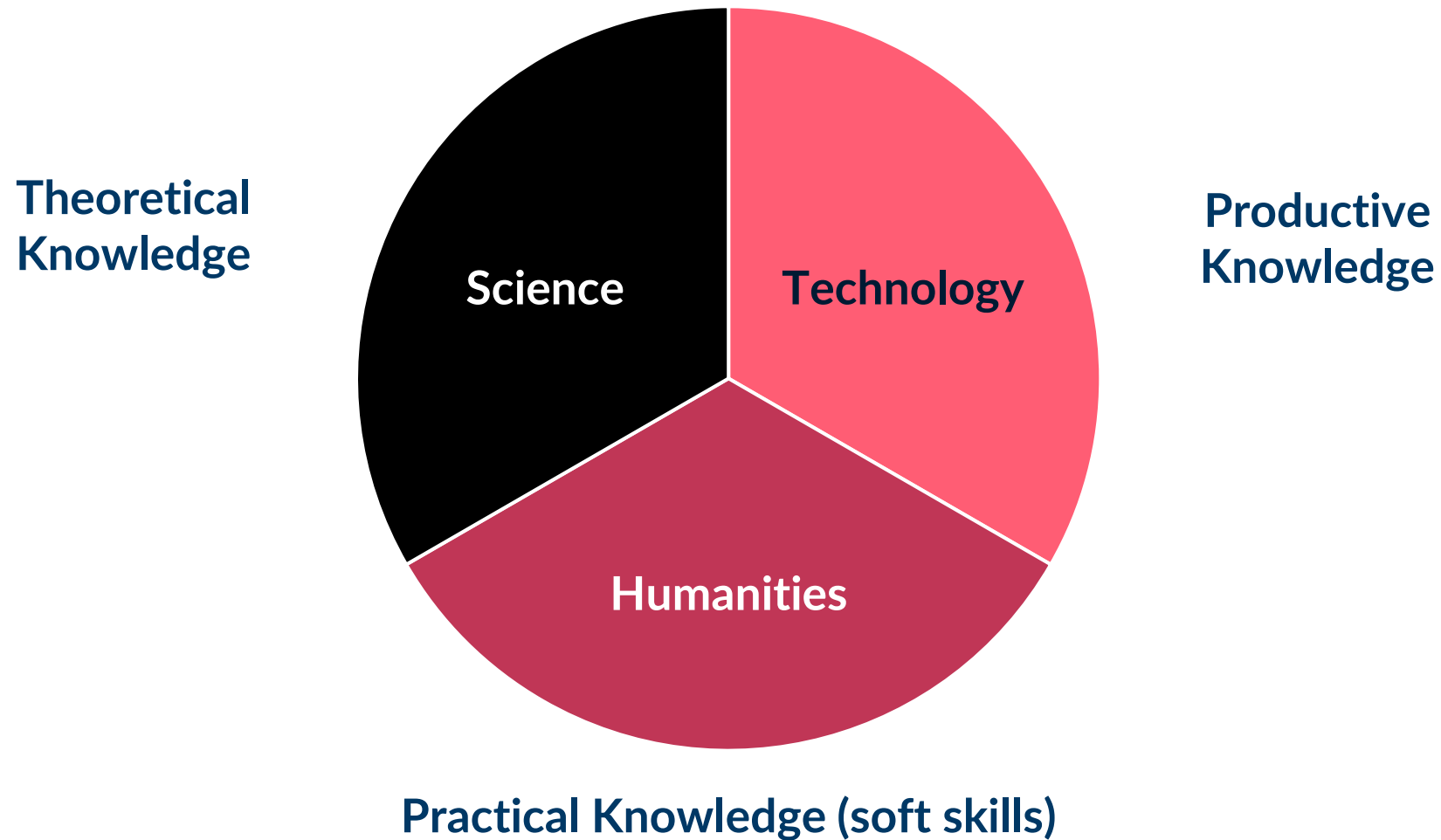
Public speaking



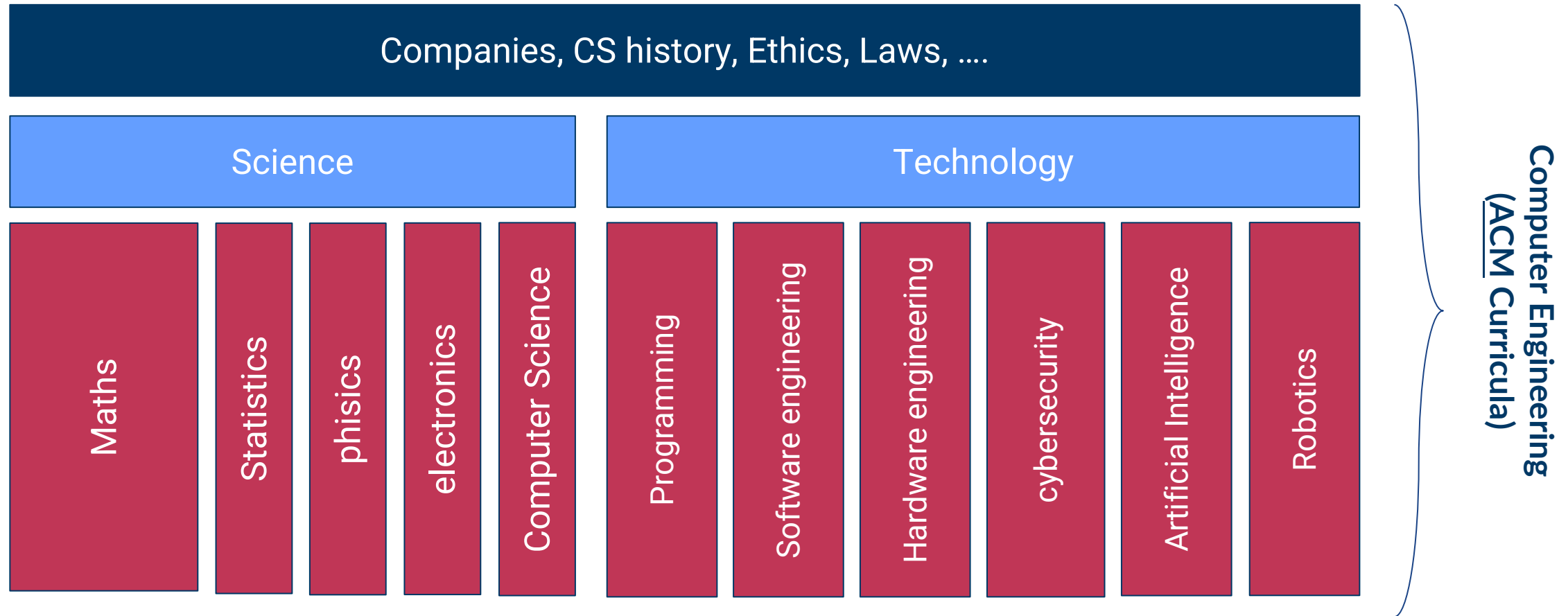
Storytelling



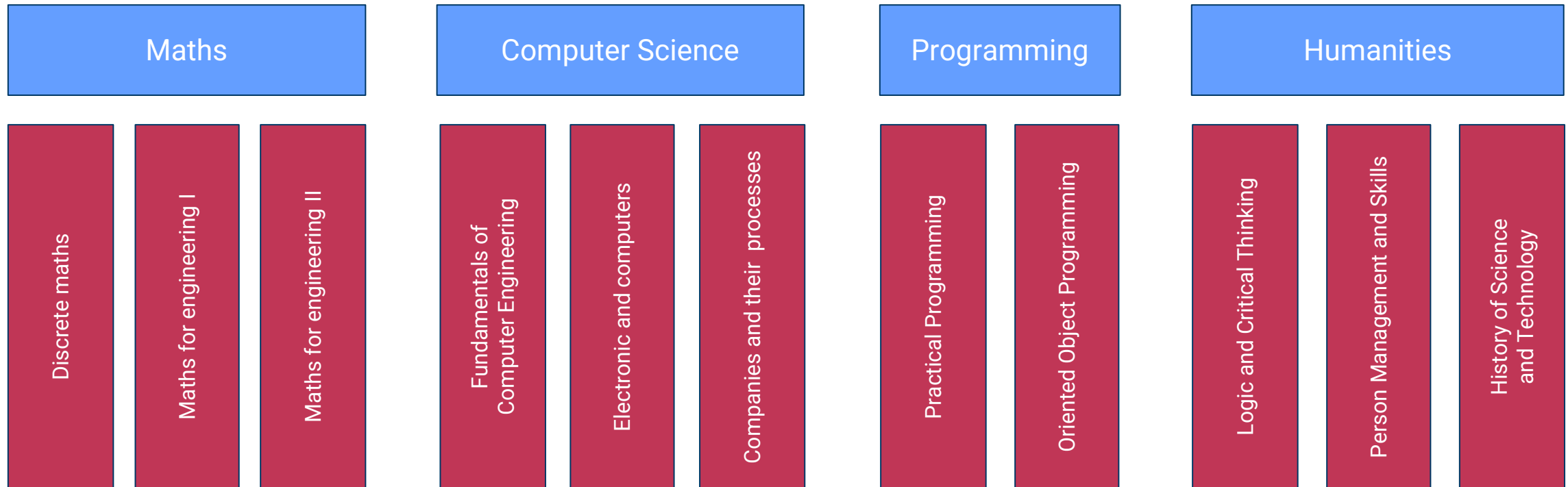
What do you should learn?



What do you should learn? The ACM curricula

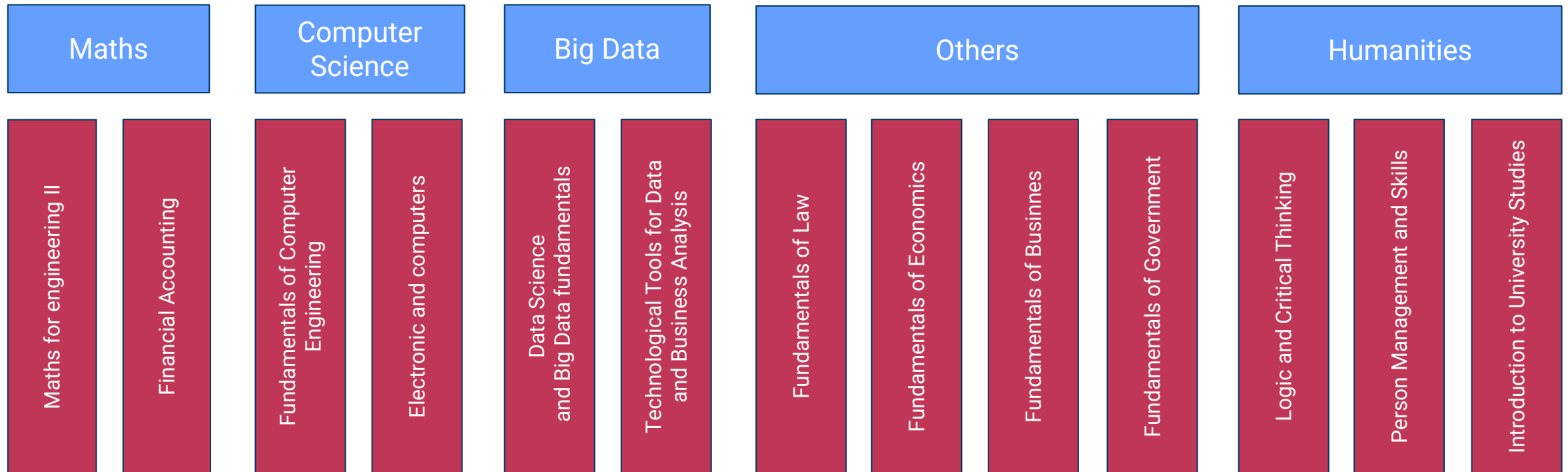


What do you should learn? The UFV curricula



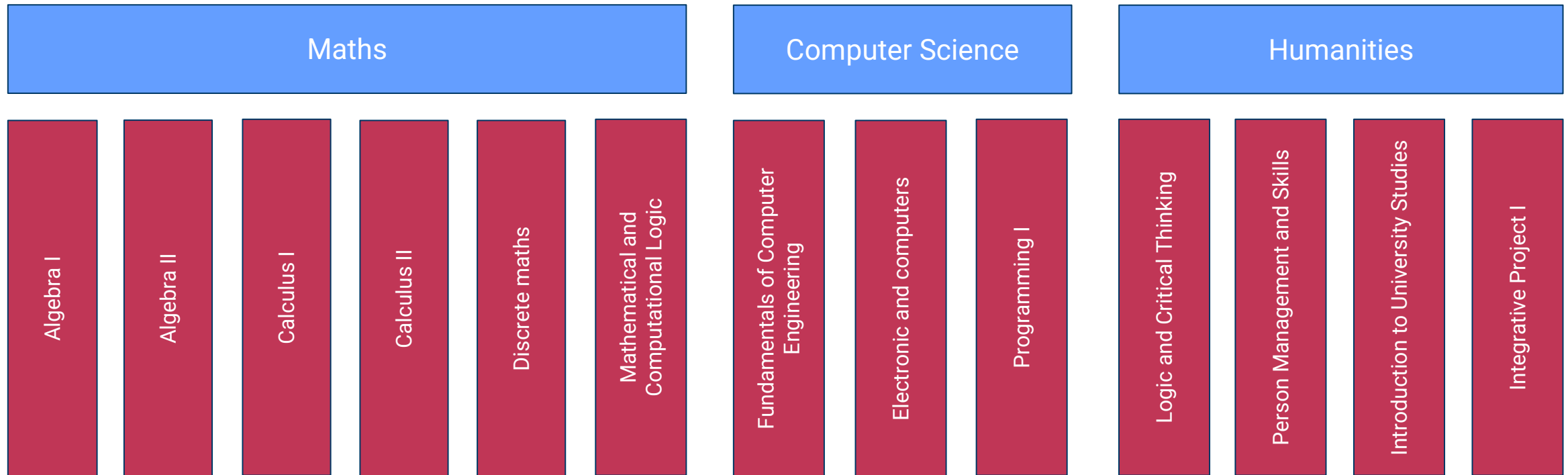
Computer Engineering

What do you should learn? The UFV curricula

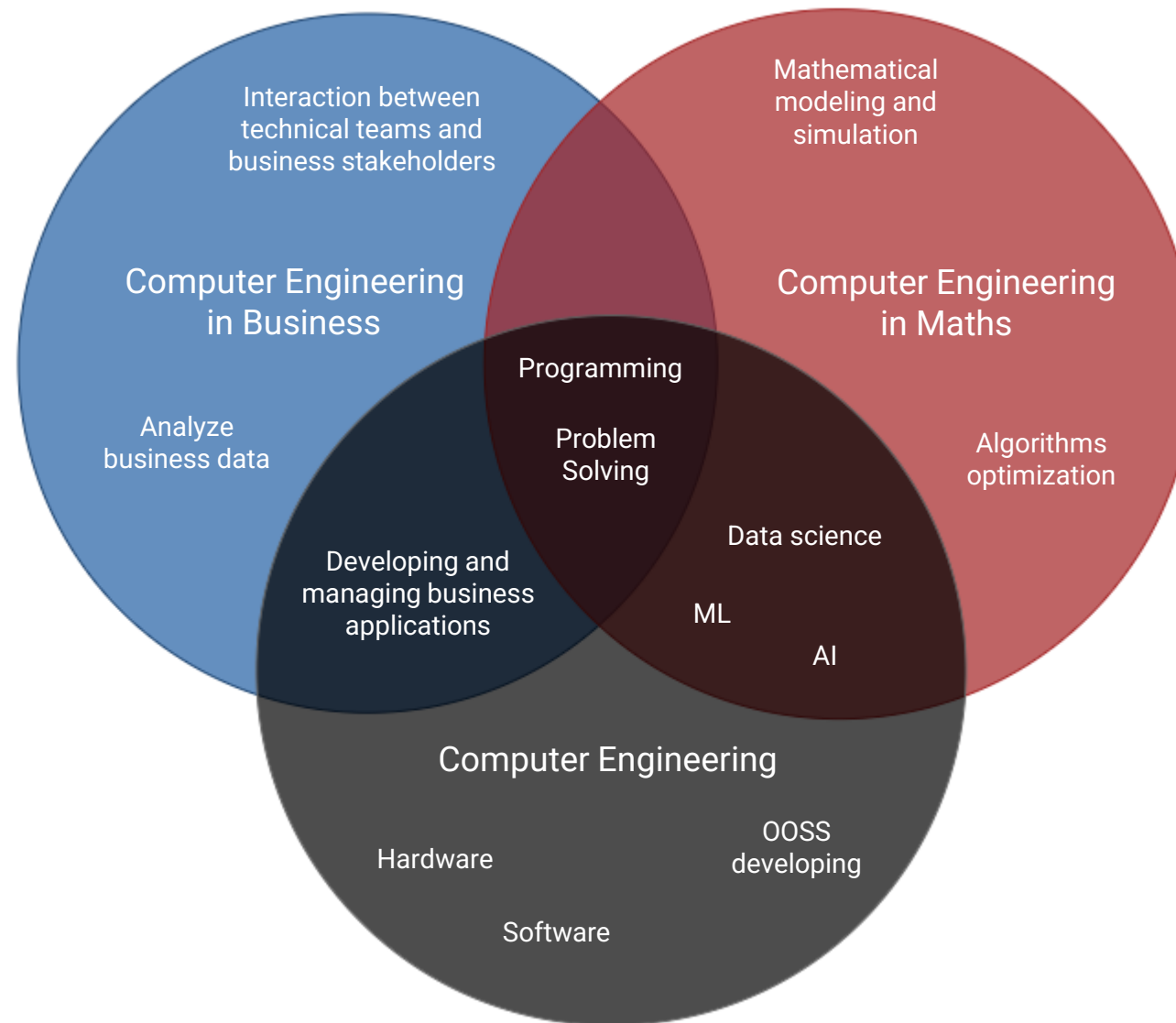


Data and Business Analysis + Computer Engineering

What do you should learn? The UFV curricula



Mathematical Engineering + Computer Engineering



Which is your profesional profile?

A computer engineer ...

is an individual who contributes to the betterment of society, enhances the quality of life, and broadens the opportunities for a fulfilling existence through collaborative efforts in the development of IT solutions.

A computer engineer ...

is an individual who contributes to the betterment of society, enhances the quality of life, and broadens the opportunities for a fulfilling existence through collaborative efforts in the development of IT solutions.

**An individual who creates IT solutions to assist/help
individuals or organizations.**

A computer engineer ...

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,
innovation
and
development**

Which is your professional profile?

There are various methods to categorize the diverse profiles within the Technology Industry (TI) ...



You can work within some of these profiles or assume a leadership role in one of them; **it depends on your choices and abilities.**

The UFV competencies ...

- **Ethical and Human-Centric:** In the pursuit of their profession, these individuals are driven by a well-defined moral compass and a commitment to benefit others. Consequently, they align their actions, both in terms of goals and methods, with a people-centric approach.
- **Creativity and Innovation:** They do not confine themselves to familiar technologies and established procedures when addressing the present challenges of their clients. Instead, they prioritize the human aspect and possess the ability to innovate while seeking solutions, either by devising novel techniques and tools or by ingeniously amalgamating existing ones.

The UFV competencies ...

- **Curiosity and Self-Directed Learning:** They exhibit an unwavering curiosity, maintaining an ongoing quest for knowledge. They possess both the capability and inclination for continuous learning, consistently enhancing their skills and expertise to better address the requirements of their clients and society at large.
- **Collaboration and Interpersonal Aptitude:** They possess the capacity to engage effectively with others, particularly within their work teams, as well as with clients and suppliers. They actively encourage interactions and uphold values such as diversity, tolerance, and respect.

The UFV competencies ...

- **Leadership and Social Responsibility:** They possess the capability and readiness to serve as a catalyst for change and societal progress. Committed to their individual goals, those of their team, and their broader social context, they embrace a calling to serve and contribute to the common good. Their approach is marked by humility and integrity.
- **Personal Leadership and Excellence:** As the architects of their own lives, they are driven to take initiative and explore avenues for the realization of their personal life goals. This extends to their professional pursuits, where they align with their calling and strive for excellence.

Where will you work?

Some key companies in the industry



