Data analytics & soft skills: how cross-functional competences make the difference for a data scientist and a data analyst

The need to understand and harness the potential of big data has given rise to new professional roles related to data analytics. The research involved a sample of Data Scientists and Data Analysts operating in the Italian context, and it identified the most frequently activated soft skills in these roles. Among the top five skills, 'self-awareness' emerged as the most employed, followed by 'customer orientation', 'diagnostic thinking', 'empathy', and 'results orientation'. Self-awareness seems to be crucial in analytical roles because these individuals are often exposed to emerging requests and non-routine tasks that challenge their skills and foster the development of meaning in their work. Customer orientation, be it internal or external to the company, is demonstrated through the ability to understand the needs of others and pay attention to their satisfaction. Both profiles require an understanding of customer expectations in order to personalise data analysis and interpretation tools based on specific needs. This is facilitated by the ability to understand others and their perspectives, which is an expression of empathy. From a cognitive perspective, diagnostic thinking enables a thorough situation assessment and the identification of the problem root cause. Finally, results orientation facilitates the adoption of a growth mindset, i.e., the ability to tackle challenging problems, overcome failures or stagnation while always keeping the goal in mind. These five competencies characterize both professional roles; notwithstanding, the study highlighted that Data Scientists exhibit additional distinctive characteristics related to adaptability, social skills such as teamwork and networking, and cognitive skills such as systems thinking and lateral thinking, which enable the generation of unconventional ideas.

The research findings are based on real-life work experiences and contribute to confirming the cross-functionality of professions related to data analytics across different organizational units and their growing key role in business contexts. The performance of these roles certainly depends on constant learning, since data science is continuously evolving; however, it also relies on the learning of a set of behaviours related to the emotional, social, and cognitive domains, which enable these roles to interpret data analyses in context and effectively guide decision-making processes.
honored to belong to this organization, the ILO is the only tripartite United Nations agency, since 1919, that brings together governments, employers and workers of 187 Member States, to set labour standards, develop policies and devise programmes promoting decent work for all women and men. My position specifically regards Social Dialogue. Our goal is to build the capacity of governments, workers and employers representatives in order to achieve effective social dialogue that contributes to guaranteeing everlasting and universal peace.

As part of my current responsibilities, I have developed and coordinated tailor made training courses and training materials for 5 continents, in countries such as: Ethiopia, Eswatini, Botswana, Honduras, Nicaragua, Colombia, Mexico, Dominican Republic, Myanmar, Albania, Qatar, The Philippines, Samoa, Occupied Territories of Palestine, Sri Lanka, Nepal, Montenegro, Ukraine, between others. Besides this, I have been in charge of managing the social dialogue training portfolio for Spanish speaking countries, including courses for building the capacities of social partners and governments regarding effective labour dispute resolution systems (conciliation and mediation of labour disputes).

Before joining ITCILO, I worked as Chief of Labour Law Division in the Government of Argentina for more than 16 years and integrated the Argentine Delegation for the ILO International Labour Conference. One of the milestones I reached was being part of national and international negotiations representing the Argentine government in bargaining structures for social dialogue and adoption of international labour standards, including the international negotiations that led to the adoption of ILO R.205 (Transition from War to Peace), C190, and R206 (Violence and harassment in the World of Work). In 2017 I was elected to represent GRULAC (Latin American and Caribbean Group of Countries) in the Draft Committee for the revision of Recommendation 71 – on using work and employment for generating resilience and overcoming crises – of the International Labour Conference of ILO, which lead to the adoption of the current ILO R.205. But as I said at the beginning, in parallel to this career path I developed a strong and lasting national and international academic career of which I’m quite proud of. I was able to learn under the guidance of great Labour Law professors, particularly Professor Adrian Goldin, who always encouraged me to continue. I’m extremely grateful for the circumstances the lead to me entered his labour law class of professors in University of Buenos Aires. This became a fundamental moment in my career, since it was in that environment when I started to get more involved on International Law and, specifically, International Labour Law.

My academic career always brought me great joy. I have been assistant professor at the University of Buenos Aires for more than 11 years and invited Professor and / or Researcher in several Latin American Universities (Indo-American University of Ecuador, Catholic University of Venezuela, Pontificia Universidad Católica de Santo Domingo, Pontificia Universidad Católica de Chile, Universidad Nacional Autónoma de México, Universidad Católica de Uruguay; etc.), Europe (Sapienza University of Rome; University of Naples Parthenope, Universidad of Murcia, Saint-Petersburg University, etc) and Asia (Prince Mohammad Bin Fahd University, Saudi Arabia). In 2020, I was named Academic Director in the University of Rosario, Argentina. That same year I was declared Guess of Honor of the Law School of the University of Rosario, Argentina because of my role in the promotion of women’s rights and international negotiations.

My passion for Labour Law has also taken me to write numerous publications on human rights, international labour law, industrial relations, algorithm management, discrimination, social dialogue, gender issues, violence and harassment at work.

What skills do you consider most important for doing your job? My job specifically requires a set of very well established core competences. To be able to adapt to major changes in work tasks or in the work environment; the ability to meet in-house and external needs effectively; the ability to develop and use collaborative relationships to achieve work goals; the ability to convey information clearly to individuals and groups; the ability to take prompt action to accomplish objectives, even beyond what is required; integrity; the ability to develop and update professional knowledge continuously, and to assimilate and apply new job-related information in a timely manner.

And last, but quite important, it requires ‘sensitivity to diversity’, which is the ability to accommodate cultural and gender differences to interact effectively with people of different cultures. For me, this can be summed up as developing respect for all and leaving no one behind.

Working within the longest-running international organization: what opportunities and what critical issues (if any)? There is an enormous power in workers, employers and governments working together in order to build a world with universal peace, based on social justice. Social dialogue is and can be, a main mean for transforming reality. And for this, ILO’s unique characteristic of being the only United Nations agency built upon ‘tripartism’ is key to find pacific methods for overcoming crises. Indeed, the three keys that open the door for consensus-built solutions where the different parties can find win-win outcomes, are much needed under today’s world circumstances. The world is experiencing a quite complex moment after the crises provoked by Covid-19 Pandemic, as well as with internal and international conflicts that exacerbate already existing pathologies in our society. As we have learned from previous experiences, crises can and have brought the world to its knees, exposing a lot of our countries to deep-rooted problems: from massive economic inequalities, ongoing racial and gender disparities, to a lack of basic health care for people who need it the most.

For over one hundred years the ILO has constituted a main source of stability and peaceful pillar for the continuity of a strong and sound system of labour relations between social partners and governments. The ILO mandate to advocate for and promote effective and inclusive social dialogue at all levels, with a view to encouraging good governance in the world of work and advancing social justice and decent work for all, becomes therefore more relevant than ever.

In particular, the possibility to assist the tripartite ILO constituents in establishing and improving policy, institutional and regulatory frameworks for social dialogue and tripartite cooperation between/among governments and employers’ and workers’ organizations; strengthening the capacity of social dialogue actors; and enhancing the role and impact of social dialogue and tripartism in the design and implementation of labour, economic and social policies at all levels, can build a bridge for overcoming these challenges. As early as 1919, there was a real understanding of the importance of social justice for the achievement of universal and permanent peace. Guaranteeing the pre-conditions for social dialogue (as known: strong, independent workers’ and employers’ organizations with the technical capacity and the access to relevant information to participate in social dialogue; political will and commitment to engage in social dialogue on the part of all the parties; respect for the fundamental rights of freedom of association and collective bar-
gaining and appropriate institutional support, provide the foundation on which equitable and just societies are built), can be the starting point for a virtuous circle of effective social dialogue, better conditions for workers, rising enterprise productivity, increased consumer demand, more and better jobs and social protection, and for formalizing the informal economy.

Therefore, I believe in the enormous potential that the ILO has to becoming a major component in this transformative process. The decisions we make today will directly affect how crises evolve as well as how the lives of billions of people can be impacted. With the right measures, the impacts and injuries can be limited. Achieving the right partnerships to extend the scope of impact, can certainly provide support for overcoming these circumstances.

In your career path, what have been the most significant moments both in terms of personal satisfaction and difficult moments? I think I mentioned some of the main moments during the first question. But in a personal level there was two moments quite significant: the first time I entered the building of the United Nations in Geneva, as part of the national delegation of Argentina. I felt at that moment the impact of being in a place that had been the centre of so many historical moments, where decisions that can impact the lives of millions are being made. I felt honoured but also humble for such responsibility, being surrounded by people that I had admired for so long. Quite a unique experience. Years later, in another representation during the committee for the development of a new instrument against violence and harassment in the world of work, I raised my sign to ‘speak up’ regarding the recognition of such pathologies as a possible violation of human rights. At the end of that session, different women that were observing the debate (ONGs) came to me and thank me for representing their voices, for saying what they couldn’t in that place. I felt a lump in my throat and had to hold the tears, after hearing these words from such strong and brave women. I felt a huge responsibility but also excitement for being able to play a role in that historic moment for the elimination of sufferings that affect primarily women and girls.

Very few people know that, during those days, I lost a very close childhood friend. He was part of the LGTBQ+ and had suffered psychological harassment for many years. Sadly, he committed suicide. This was a difficult emotional moment for me to overcome while being in a high-level working commitment. But I found strength in an oaf I made in memory of my good friend: to use every opportunity to promote awareness of the risks and possible consequences of the different forms of violence and harassment, to prevent this from happening again and to live life at the fullest for those that are present and specially for those that are no longer with us. No one should suffer these treatments from anybody, and this includes the world of work.

Nowadays, I carry my commitment delivering sessions, conferences and developing training courses oriented to prevent these pathologies – with a gender perspective – in the world of work and awareness raising campaigns.

What advice would you give our female students for a career within an International Organization? My advice would be to dare to dream, to dream big – even beyond what we could typically aspire. Believing in yourself is a key part of the journey. But my advice is also to work for your dreams. We, as women, face enormous challenges regarding the world of work: barriers to access education, barriers regarding ‘time’: both for studying and for working in a remunerated job and being able to progress to higher positions. The unfair distribution of chores and responsibilities inside the households produces a big limitation in terms of accessibility to the labour market for women. Violence and harassment: while searching for a job, while working, while commuting to work, just to name a few manifestations. Maternity penalty stereotypes, gender norms and rules: many times, the stereotypes about what a woman can do or what she can be good at restrict the possibility to have access to certain jobs. This restricts the right to decide their own project of life and even the vocational call. Therefore, it is relevant to build our capacity and competences in order to be prepared. Master different languages, get involve with community activities that allow you to learn about how to build projects and contribute to the community. Dare to apply for opportunities and training courses that can provide you with the tools to open possibilities for your future. Build your own capacity to reach your dream. Take inspiration from other women, create female networks that will support you in your journey. And, finally, keep going. Life can have different obstacles, but if we set our minds into something we can achieve everything we want.

Training is one of the levers to promote sustainable development. In your experience, what are the challenges that will need to be addressed to ensure qualitatively advanced and virtuous educational pathways? The world is undergoing rapid and deep changes brought about by technological development, demographics, globalisation, and climate change. These trends are affecting the composition of employment, the nature of the tasks carried out at work and the skills required in the labour market. They are also putting enormous pressure on traditional education and training systems, calling for improved quality and new approaches to lifelong learning. The frontloading of skills through initial training for a single lifetime qualification is no longer sufficient or effective and is increasingly being challenged in the context of rapidly changing skill needs. Evolving and fast changing labour markers will impose a massive challenge on traditional education and training systems and will require new approaches to lifelong learning, approaches that introduce integrated models of governance and financing in education and training systems.

Rethinking lifelong learning is essential in the context of the ongoing changes. Education and training systems of the future need to be flexible and prepare individuals to learn continuously over their life. New technologies can reduce the costs of training and of information, advice, and guidance, and can increase both their availability and accessibility. However, as training markets evolve and the nature of employment changes, training provision and participation should be accessible – especially for the groups in a vulnerable situation, such as women and girls – and encouraged throughout the lifecycle. Financial incentives are likely to address only part of the barriers to skills investments that individuals and employers face. Therefore, it will be essential to address non-financial barriers to training participation by providing guidance, counselling, childcare and support services, and ensure that training provision is flexible enough to overcome time constraints.

Innovation, inclusion, and digital transformation could be tools to improve training development processes that ensure qualitatively advanced and virtuous educational pathways. In addition to reaffirming the importance of a well-functioning and well-resourced education and lifelong learning system for promoting strong and inclusive growth and identifying actions that countries could take to improve the contribution of skills to stronger and more inclusive growth.
Lei and Science
Lei & Scienza

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a conversation with Somayeh Taghavi
Assistant professor of applied Chemistry at the University of Mazandaran, Iran

You are professor of Applied Chemistry at the University of Mazandaran, Iran and you are collaborating with Ca’ Foscari. Could you tell us about your scientific path? I started my academic study in Industrial Chemistry at University of Tehran, Iran. After my bachelor and master study at the same University, I started a postgraduate research activity at University of Tehran and, during my research period, I obtained an international research fellowship as a visiting researcher in Italy for six months. In 2016, I came to Italy and started my research activity at CATMAT, as a visiting researcher. After six months, when I returned to Iran, the valuable achievements during my research at CATMAT constituted the very motivation behind my application for pursuing and gaining more experiences in this group. Therefore, I wrote a Marie Skłodowska-Curie project proposal as an individual researcher under the supervision of Professor Michela Signoretto; my proposal has been awarded the Marie Skłodowska-Curie Actions Seal of Excellence. In 2018, I returned to Italy and started my new research as a PhD student at CATMAT. Their strong research environment was the important factor to give me a great opportunity for close communication and challenge myself through critical thinking and innovativeness. During my PhD, I carried out a three-month research activity at Group of Industrial Chemistry and Reaction Engineering, Abo Akademi University of Turku, Finland, under the supervision of Prof. Dmitry Murzin. Indeed, the research that I performed during my PhD received the prestigious Mauro Graziani Award for the best research in the field of catalysts for energy and environment by GIC-SCI. After PhD, I started postdoctoral research at CATMAT following several academic and industrial projects. Meanwhile, I applied for a job position as an assistant professor in my country and, after several steps of interview among many participants, I obtained the job. At the moment, I am working as an assistant professor of Industrial Chemistry at the University of Mazandaran, while I am still keeping my collaboration with Ca’ Foscari.

What was the focus of your research activity? My research has been focused on catalytic science and gas/liquid phase reactions respecting the environment and circular economy. I am skilled in formulation, characterisation, and application of various micro-mesoporous and acid/base materials such as zeolite, oxides, activated carbons, composites and hybrids. In addition, I am experienced in different classes of biomass and biomass wastes and their valorisation to valuable chemicals, fuels, energy, and smart materials. More recently, I have been involved in an INEST-PN-NR project focusing on optimization of sustainable and innovative materials for photocatalysis.

Why did you choose Italy for your abroad studies? First, I have been interested in Italian culture, people, nature, history, and society since my childhood. I was motivated to live a period of my life in Italy and feel whatever was in my dream from my childhood. Second, the high scientific level in Italy motivated me to have this experience in academic community.

What will remain of your experience in Italy? Let’s say Italy is my second home. I cannot describe my huge and worthwhile achievements in Italy in some sentences. The people around me in Italy, both at university – especially CATMAT – and outside university, have been always as my family and supported me in all aspects of my life. I have a lot of special experiences beyond academic life thanks to my colleagues at CATMAT. For instance, several times I have been invited by my venetian colleagues for boat tours around Venice lagoon. It was very special for me to be hosted by them, enjoy the view of the amazing Venice from a boat and, learn the history of Venice from Venetians. Moreover, I was invited by my friends from outside university to their hometown (for example in Sicily) and I experienced the Italian culture, food, history, and people from different sides of Italy. Indeed, the warm hospitality of people in this beautiful country will always remain with me.

Why did you choose a career in science? Did your family support your choice? I became interested in Chemistry during high school because of an amazing chemistry teacher. Fortunately, my family have always supported me to select and explore whatever I liked and motivated me to pursue my interests. I passed the difficult national entrance exam to university, and I was accepted in one of the top-ranking universities of Iran (University of Tehran). So, I moved from my hometown (Noor), which is in the north of Iran, to Tehran. During my academic life, I lived in the residence or rented a house with my friends from different parts of Iran. Most of my friends have been scientists and we still have many collaborations together among different universities.

Did you have any trouble relating with your European colleagues? My both personal and professional relations with my European colleagues have always been friendly. At CATMAT, I am working in a group of men and mainly women that all are very strong, creative, wise in science, and friendly in both scientific and personal relations. At university, every scientific challenge has been solved in the group and we have been free to discuss and explore the topics together. Moreover, in my social life, whenever I needed a help or support, my colleagues and professor were there for me. I also had a similar experience when I was in Finland, and I had colleagues from different European countries who were very nice and friendly with me. Moreover, at CATMAT, we often have had the occasions to share our cultures and foods together. For instance, every year at Christmas time we have a dinner together in my professor house. For dinner, I always prepare some typical Iranian food for my colleagues and now they are familiar with many Iranian foods. In fact, we are as a team or a family both inside and outside university.

Speaking of Chemistry, it is said that chemists are supposed to be good cooks! Can you share with us the recipe for your favourite Iranian dish? Iranian cuisine is amazing and very particular. Of course, I am professional in cooking delicious Iranian foods. Let me just say the name of some Iranian foods which I have cooked for my Italian friends, and they really liked it, such as: Fesenjoon made of walnuts, meat, pomegranate sauce, Zereshk polo made of rice, barberry, and Saffron, Sabzi polo ba maki made of rice, herbs, fish, and Kašk āe bademji made of eggplant, dry whey, walnuts and garlic. We normally prepare this sort of traditional foods in family gatherings and special festivities such as Persian new year (Nowruz) on March 21st.
Social media and the world of work: learn how to improve your LinkedIn profile using artificial intelligence & more

Social networks have been getting closer and closer to business over the years:

• They have given rise to new jobs such as content creator and social media manager;
• They are powerful platforms for professional communities; for example, many Facebook groups were established to extend the experience of corporate training courses;
• They are the place where new job opportunities are discovered through advertisements or informal word-of-mouth from former classmates or colleagues;
• They are digital touchpoints allowing individuals to make themselves known, build professional credibility, and form valuable relationships, if strategically managed.

Instagram, Facebook, TikTok, YouTube, or LinkedIn can be highly relevant, depending on industries and professions; in particular, LinkedIn covers a wide range of them by focusing on the work and education realms. Therefore, if we talk about social networks for business, LinkedIn is the platform to engage with, understand, and dedicate to.

The first step is to have a complete and up-to-date personal profile. Let’s take a look at some best practices for an effective LinkedIn profile:

• Pay attention to the visual aspect, including the profile and background pictures. In just a few seconds, they communicate who we are and create the first impression that will remain a significant point in subsequent interactions. An effective profile picture encourages recruiters to contact you for an interview or collaboration proposal. The profile picture should be a recent portrait. The quality should be high (avoid blurry photos). The background and clothing are part of the communication and you should choose them after considering the level of formality you want to convey.
• The Headline is the text that appears immediately below the name and surname. Many people only write their professional role or field of study; however, it is a good practice to leverage the 220 characters provided by LinkedIn to highlight your values, notable achievements, specializations, and future goals. As an example, I share the Summary from my LinkedIn profile: “Digital & Content Marketing Strategist | Lecturer and Consultant | Speaker and Moderator | Agile Marketing Certified | I guide businesses in building their marketing strategy, placing content at the center. This highly visible text represents the crucial core of professional identity on LinkedIn along with the profile picture.
• The main sections – About, Experience, Education, Publications, and so on – should be completed, regularly updated, and enriched. Among the basic recommendations, I always suggest checking the privacy settings that regulate, for example, who can see the profile information, request a professional connection, view connections in our network, and much more.

A good, complete, and up-to-date profile is the first step to make LinkedIn an ally in professional relationships. The next step to make the most out of it is to publish content. A text post, or even better photos and videos, amplify our presence on the platform, reaching the LinkedIn feeds of people in our network and beyond. The best practices to follow in creating content that works and liked by the LinkedIn algorithm may be complex, but I will sum them up with a few key concepts: relevance to your target audience, consistency in publishing (yes, quantity matters, and one post per week is really the minimum), adherence to the ‘grammar’ of LinkedIn, such as using hashtags and persuasive writing techniques.

Recently, ChatGPT and other generative AI systems have also started to be used to improve profiles and create content for LinkedIn.

For instance, to create a Headline for my profile, I can provide ChatGPT with this prompt (instructions):

“I am a [role, profession] and I want to improve my LinkedIn profile. My audience consists of [examples of target contacts, to whom I am addressing]. Write 10 different Headline proposals for my LinkedIn profile based on these important pieces of information: [List the highlights of your CV, achievements, values, experiences]

Keep in mind that the Headline should be short and impactful, with a maximum limit of 220 characters. Consider these 3 Headlines as good examples: [copy and paste here the texts of 3 well-written headlines obtained from LinkedIn]”

Similarly, I can ask ChatGPT to write a post for LinkedIn based on a press release or to update the description text of a professional experience by adding new accomplishments; by the way, you should review and improve contents before publishing.

These are just some examples of use; good results can be achieved through engaging in a conversational mode with ChatGPT and other generative AI systems. Possibilities are truly infinite, and tools like ChatGPT are excellent to support you in making LinkedIn an ally in the world of work.