Career Sheet: Data Scientist

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My name is Flaminia, I am Italian, and I have been living in Berlin for 11 years. My husband and I moved here to continue our careers in Physics as researchers. I studied Physics and then I completed a PhD school in Geophysics. I worked for almost ten years as a research seismologist in different European institutions. Four years ago, I decided to leave the academy and work as a data scientist.

OVERVIEW OF THE JOB

I am a data scientist in a fintech company that provides different online payment solutions. My job has two principal goals. On one hand, I analyse customer-related data and use it to prevent online fraudulent transactions. This is done for example by developing machine-learning-based algorithms, which can predict patterns learned on past data. On the other hand, I assess the financial risk of the company so to keep it under a certain alert level and avoid bankruptcy. This is based on some mathematical simulation algorithms.

WHAT INSPIRED YOU

When I decided to leave my academic path, I started trying to figure out in which sector I could use my background and skills. Data science seemed to be a sector in strong expansion, and I thought it would have been a possible solution for those who have a scientific background. Therefore, I started to delve a bit deeper into this topic.

TYPICAL WORKING DAY

In my team, we start every day with a meeting called *stand-up* where we update each other on the status of the different tasks assigned to each of us. During this meeting, we decide if we need to work together in pairs or alone. Then we start our daily work, which mainly consists of programming. But we also have meetings where we discuss within the team how to tackle a new problem or about the architecture of a new service. Besides, we meet with our stakeholders to present them with our latest achievements and discuss further developments.

STUDY & CAREER PATH

I studied Physics and after graduating, out of curiosity but without having a well-defined goal, I tried to get into a PhD school in Geophysics, and I succeeded. Today I understand how unprepared I was back then when a PhD seemed almost the only way to go and I did not know the true spectrum of job possibilities I could have had. This is perhaps the step I would change today: going back to that choice, I would try to make it with more awareness. I would ask myself not only what I wanted to do when I grew up but also the realistic outlets for each possible choice and where my skills could have made the most of them. After getting my doctorate, I worked as a researcher in Italy, Germany and Switzerland. Successes and failures led me after 10 years to realise that I would probably never be able to evolve to a permanent research position and so I decided to decide for myself. My road in Geophysics was over and I started a new adventure in the industry. For this leap, I studied on my own: online courses, meetups, networking and books. But the real school was in the field, with the first job, learning by doing, learning from others. Data Science is not yet a well-defined academic route. For example, my colleagues have very different backgrounds and career paths, with a common denominator: a scientific basis.

KEY SKILLS

- **Data Analysis, Data Presentation** – is the core job of a data scientist. We look for patterns in data.

- **Analytical Reasoning, Critical Thinking, Problem Solving, Creativity** – we try to understand complex problems and solve them with a simple solution.

- **Research** – sometimes we need to search for innovative solutions in the scientific literature

- **Active Listening, Collaboration, Social Skills, Emotional Intelligence, Empathy, Team Spirit** – it's a very collaborative work, where relationships might be very intense and demanding.

- **Presentation, Writing, Openness towards feedback and criticism** – we present our solutions/products to stakeholders or product managers; we write documentation. They constantly give us new targets for improvement.

- **Adaptability, Commitment, Curiosity, Flexibility, Initiative, Motivation, Personal responsibility, Resilience, Self-confidence, Self-discipline, Self-reflection, Style of manners** – always better to have!

- **Productivity, Time Management** – we deliver products and we should be on time

- **AI** – we develop and implement machine-learning algorithms, which directly learn from data

- **Database Administration, Network and Information Security, Scientific Computing, Software Engineering, Software Management, Programming** – our algorithms are coded and then go into production, becoming services. The whole infrastructure should be secure because we work with confidential data. Data are administrated in databases.

CAREER PROSPECT

Anything that requires analytical skills, programming, problem-solving. It might or might not be connected to Geophysics or financial technologies (where I have already experience). It depends on how much tolerance there is in training a new hire.

CHALLENGES

Precision and speed must go hand in hand.

YOUR ADVICE TO STUDENTS

The study is as essential as experience in the field. Try to complement your studies with as many internships as possible. Those will help you decide what you really like to do.

YOUR ADVICE TO TEACHERS AND PARENTS

I think that a stimulating environment is essential for children, where they have the possibility to find their own way. For me, it was essential to have experiences abroad to see how many things you can do.