

Olga Mula

Mathematics and Computer Science
Eindhoven University of Technology
o.mula@tue.nl

Column New Impulse

From Paris to Eindhoven

In this column, researchers who have been recently appointed to one of the Dutch mathematics institutes, introduce themselves.

“When a girl is tired of Paris, she must be tired of life.” That is what a fellow colleague said to me when he learnt that, after having spent the last fourteen years in Paris, I had decided to leave and relocate to Eindhoven. That was hard to hear but in a certain sense he was right. I was tired. But not of life! Only of a certain way of life, and a way of working.

My name is Olga Mula. I have been an Associate Professor of Applied Mathematics at TU Eindhoven for a year. I lead a group on Data-Driven Computational Science, and we do research on inverse problems, reduced order modelling, numerical optimal transport, and the mathematical foundations of artificial intelligence. In this note, I will not speak that much about my research but I will rather talk about my background, and why I decided to move from Paris to Eindhoven without any prior connection to the Netherlands.

I originally come from Spain, and I grew up as a very happy girl in the suburbs of Madrid. As a little child, my dream job evolved quickly from supermarket cashier (because little children are very materialistic, and cashiers are the ones that really handle money), magician (because they can produce anything, including money), astronaut, architect, and I very quickly converged to wanting to become a researcher in something connected to cutting-edge science.

I feel that I was put in a good track to become a scientist since a very young age. I do not come from a scientific family but my parents cared very much about my education. They did not want to send me to the shady public school next to my neighborhood which is often in the local news because of constant

social and drug-related problems. Thanks to my parents' caring, and also thanks to good luck, I was accepted at Lycée Francais de Madrid when I was five years old. This is a private bilingual French school which had a very good reputation. I will be forever grateful to my parents for making me a bilingual person at such an early age. I enjoyed very much studying at Lycée Francais, and I stayed there until I joined the Polytechnic University of Madrid to study energy engineering. There, I quickly realized that I preferred the French way of teaching, and that I was also more interested in the mathematical foundations of engineering, rather than engineering itself. So, to enhance my profile in applied mathematics, I joined École Polytechnique in Paris for a double degree. I arrived there in 2007, and graduated in 2010. I never came back to Spain to work. In fact, exactly at the time of



my graduation, Spain was hit by several terrible storms: the international financial crisis, a national reform of the labor market promoting short-term employment and early retirements, and a very questionable re-structuring of universities. As a result, it was almost impossible to find any interesting jobs in the Spanish industry or academia at that time. Our generation either went abroad, stayed unemployed, or accepted to take uninteresting, underpaid jobs.

On my side, I received a good offer to pursue an interesting PhD at the Laboratoire Jacques-Louis Lions, the famous applied mathematics department of Sorbonne University. The PhD was on topics revolving around time domain decomposition for kinetic problems, and inverse state estimation with reduced order models. After a one-year postdoc at RWTH Aachen, I returned to Paris to take a position at Paris Dauphine University in 2015. The position, called *Maître de Conférences*, is roughly equivalent to an Assistant or an Associate Professorship in other countries. It has the tremendous advantage of providing job security at an early academic stage because it is permanent after only one year of probation period. At Dauphine, I had the chance to develop as a young professor, with my own line of research, and a lot of opportunities to collaborate with outstanding colleagues from the Parisian ecosystem. The research activities, and interactions were absolutely extraordinary. Still, many aspects beyond research were unfortunately not as optimal, and I started to feel increasingly annoyed by them.

The first point is that living in Paris itself for a long time can become exhausting: bad and expensive housing, long commutes to go to work, frequent strikes and demonstrations of all sorts are part of the every-day life. One eventually wakes up wondering what is going to be the problem of the day that may drain your energy. The covid pandemic was also not very easy to experience in Paris, being locked down in a small apartment. The second point of disappointment came from the French academic system itself, and here I am going to give a very personal point of view of the situation. Unfortunately, salaries are currently low because they have not been properly updated in the last fifteen or twenty years. The salary evolution during a professor's career does not progress very quickly either. One of the elements that was making the job still appealing was the relatively good retirement plan. This is however being revisited by the government, and the expected outcome is of a substantial degradation. At some point, it became clear to me that the financial conditions were never going to allow to buy a decent

apartment in Paris, nor to expect a good retirement. The last problematic point is connected to the topic of work load. In disciplines such as applied mathematics and computer science, we were facing an increasing demand while we were not receiving enough reinforcement in staff numbers. This is combined to the fact that teaching duties are unequally distributed because the French academic ecosystem has plenty of different statuses. As a result, some colleagues were enduring heavy teaching hours. Some of them were clearly overworked. Since promotions are still rather based on research accomplishments, this point felt disturbing since it leads to certain competitive advantages/disadvantages depending on your respective position. I did not feel that *Maîtres de Conférences* were in a great position in this respect.

Tired of living in a too hectic, crowded city, and tired of an academic system that, in my view, desperately needs more financial influx and some internal renovations, I decided to look for positions beyond France. The Netherlands and Eindhoven appeared as a very appealing option. The Brabant region is extremely dynamic, and very technologically oriented. Eindhoven is a much more manageable city in its size than Paris, and I love being able to bike everywhere safely.

The academic system seems somehow less heterogeneous in terms of organization, the type of positions that exist, and the career evolution of staff. I also see a lot of conscience about having a realistic workload, and there seem to be very concrete actions taking place to work on this problem. Academic salaries are also better aligned with respect to the current cost of life, and the responsibilities carried by professors. Not everything is perfect, though! I am often surprised to see the extent to which connections with industry influence how universities are thought, and run. I am also still adjusting to the way of understanding teaching here, which I find different with respect to the one that I had been in contact so far. I also must admit that I miss the beauty of the Parisian architecture, and I also miss my friends and colleagues from there. Despite this, being in the Dutch system is being a great experience all in all, and I have found many interesting colleagues doing great research and inspiring teaching. Thank you all for the very warm welcome to the Dutch system! ❖

Personal research page: www.olgamula.com

Group's page: www.datadriven-sci.com