For this first post, I would like to introduce myself and explain my motivation for starting a computational biology blog. I am a postdoctoral researcher in Immunology at King’s College London. I obtained my Ph.D. in December 2014 in Tours, France, studying neonatal intestinal immunity. I then pursued my research in the USA and the UK, studying B cells, and the role of the gut in their development.

Growing up in the ’90s, I had a front seat to the exponential and fast evolution of telecommunication technologies. From my time as a teenager to my college years, I witnessed the democratization of access to the internet and the increase of access to affordable computing power.

As an undergraduate student and then as a researcher in Immunology, I also witnessed a similar revolution in the use of Computer Science in the analysis of exponentially larger biological datasets.

As a student, I was studying gene expression at a transcriptomic level by qPCR and studying protein expression by ELISA, Western Blot, and Flow Cytometry. For cost and technical reasons I was at the time analysing at most the expression of a few hundred genes at a transcript level and a dozen gens at a protein level. However in the last ten years, the improvement of experimental techniques has allowed us to collect more data and at a reduced cost changing the way we analyse the biological process.

In the field of Immunology, the progress in [Flow Cytometry](https://www.bdbiosciences.com/en-us/instruments/research-instruments/research-cell-analyzers/facsymphony), [Next Generation Sequencing](https://www.sciencedirect.com/topics/medicine-and-dentistry/next-generation-sequencing), [Mass Cytometry](https://www.fluidigm.com/products/helios), [10X Genomics](https://www.fluidigm.com/products/helios), and [Seahorse XF Analyzer](https://www.agilent.com/en/products/cell-analysis/seahorse-analyzers) allows the study of the immune system at a cellular resolution. At the same time, progress in computer science and computing power is now allowing us to analyse more massive and more complex datasets. For this reason, computer science has become a crucial part of immunology research.

As an undergraduate student in immunology, learning statistical analysis was a necessary step, and I am certain that learning unsupervised and supervised machine-learning concepts will become a standard step in teaching biology.

During my time as a college student, programming and machine learning were not yet part of the standard teaching corpus. As a researcher in an immunology team studying B cells repertoire and using single-cell analysis, I became motivated to learn more about programming and machine learning.

The goal of this blog is for me to record and share what I learned so far. As Nicolas Boileau said: “Whatever is well conceived is clearly stated, and the words to say it flow with ease.” Maintaining a blog while learning data science techniques is an excellent way for me to learn quicker and, hopefully, can be of help for anyone on a similar learning journey.